DEVELOPING CHIEFS OF SUPPLY

THESIS

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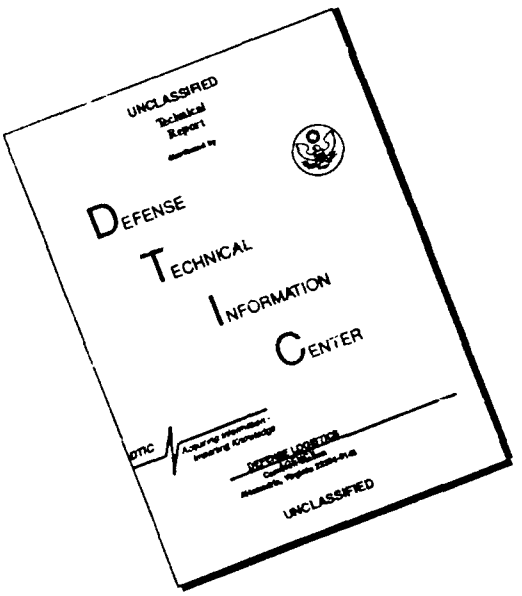

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Abstract

The Air Force Supply Executive Board was concerned with the extremely high non-selection rate of officers for Chief of Supply positions, by the major air commands. A previous study identified skills that were lacking within the broad category of human skills. This study undertook the task of identifying specific human skills that could be tested. The study had three objectives. (1) Determining what human skills are critical for becoming a Chief of Supply. (2) Determining whether supply officers are deficient in these critical human skills. (3) Determining the preferred method of training for correcting those deficiencies. The methodology was based initially on a literature review designed to identify individual human skills. From those skills, a survey questionnaire was developed and distributed to 857 supply officers and Chiefs of Supply.

The findings identified a core of twelve human skills critical to becoming a successful Chief of Supply. Supply officers were identified as being deficient in five of the twelve skills. Due to lack of significant differences between capabilities of the two sub-populations, and the possibility of overstated capabilities, the list of skills to be trained included the top ten skills identified from each sub-population as important for a Chief of Supply. Also included are the top ten skills identified as requiring training for each sub-population. The result was a list of 22 core human skills identified

for potential training. The method most often identified for training these skills was a professional development seminar. The study recommends utilizing both base level seminars and regional seminars, and suggests that Chiefs of Supply would be the most appropriate instructors for the professional development of supply officers.

DEVELOPING CHIEFS OF SUPPLY

I. Introduction

Lieutenant Colonel Brian Harrington hangs up the phone and sighs. He just doesn't understand. He had completed Air Command and Staff College (ACSC) and Squadron Officer School (SOS) in residence. He had earned his masters degree through night school, and attended all the available supply schools. Finally, he thought he had a good performance record. By doing these things and since his name appeared on the COS candidate list, Brian was sure that he would get a Chief of Supply (COS) position. So when the call came from the Military Personnel Center (MPC) at Randolph AFB, Texas, he cannot understand why he was not selected by any of the Major Air Commands (MAJCOM) to be a Chief of Supply.

While one may think that this is a rare occurrence, the records show that two-thirds of all personnel considered for a COS position are not selected. A COS position is critical to a supply career. In most cases, to be promoted to Colonel, it is necessary to be a COS (Peterson, 1988a). Since so many Chief of Supply candidates are not being selected to fill the available positions, the senior supply leadership has expressed interest in the skills necessary to be a Chief of Supply.

Problem Origination

The Air Force Supply Executive Board (AFSEB) is composed of the supply community's senior leadership. The board consists of the Director's of Supply from each MAJCOM, Air Force Logistics Command (AFLC), Air National Guard, Air Force Reserves, and Air Force Supply and Fuels Division (HQ AF/LEYS). Each of these officers, at some point in their career, served as a Chief of Supply at a base-level Supply Squadron (Peterson, 1988a).

These senior leaders are responsible for the health and welfare of the Air Force supply system. They determine personnel policies, prioritize software requirements, identify problem areas and assign them to work groups, set operational priorities, and determine where the supply community needs to be in the next century through strategic planning (Brannam, 1989).

The AFSEB convenes semi-annually to discuss the current and projected needs of the supply community. In March 1988, the 47th Air Force Supply Executive Board convened at Maxwell AFB, Alabama. The first topic of discussion was the skills of the junior supply officers being considered for Chiefs of Supply (COS) positions. Approximately two-thirds of the officers in the COS selection pool, were being turned down by the Major Air Commands as unacceptable. The board concluded that the supply officers were lacking some essential skills needed for a COS (Peterson, 1988a).

Chief of Supply Selection. There are at least two places where an officer may be eliminated from the COS selection list.

The first elimination point is at the Military Personnel Center. The supply resource managers publish a list of eligible candidates, based on their performance reports and rank. When each tentative assignment is made, a commander's involvement letter is sent out to ensure the eligible officer's current boss feels that the member would be a good choice for the job. If the member's boss says that the officer is not ready for a Chief of Supply job, then that member's name is removed from the eligibility list. According to Major Denning, this list is published twice a year (Denning, 1988).

The second place that a supply officer can be struck from the list is at the major air command level. Once the list is published, MPC sends it to each MAJCOM. It is from that list that the major air command Director of Supply make the selections for Chiefs of Supply. Before making a selection, a phone call will be made to the candidate's current boss to solicit an opinion as to whether that officer is suitable for the future job. If someone in the major air command supply directorate knows that person, their opinion will also be solicited. If the results of the information search are not positive, then the officer probably will not be selected. Even if the candidate's name is not removed from the list, that person's chances of getting selected are almost non-existent (Denning, 1988). It is during the second portion of the selection process that two-thirds of the COS candidates are being rejected. Hence the concern about supply officer development among the Directors of Supply.

Defining the Problem

The members of the AFSEB could see that today's supply officers were missing some essential set of skills necessary for them to become Chiefs of Supply, but it was not obvious what skills were lacking. Unfortunately, the directors could not verbalize how they obtained the skills that made them a successful Chief of Supply. Because the Directors of Supply could not identify the skills, they were not able to determine the best method for developing these skills (Peterson, 1988a).

According to Lieutenant Colonel Tim O. Peterson, Director of Supply, Air Force Logistics Management Center, each of the supply directors perceived that they had achieved their current success through a different method. Since there seemed to be such disparity in backgrounds, Lt Col Peterson first collected information from each of the AFSEB members to determine if there might be some common threads among the various careers. The information requested was a time line of each Colonels career from first entering the Air Force (AF) until the present. All professional military education, all technical training, all academic education, and all jobs were included in the time line.

The data were analyzed using a content analysis technique. The merging of the data returned some surprising results. The board members were, in fact, a very homogeneous group. They actually had very similar backgrounds. Each had spent roughly the first eight years of their career at base level. All had attended the introductory supply officers course. In addition, each

had held at least one staff job prior to being a Chief of Supply (Peterson, 1988a)

The perception that each person achieves success through a different method is common, as was the case with the Directors of Supply. However, Paré and Woods (1987) wrote that Chief Executives throughout the world share similar attributes in both their job histories and their personal life. Klein and Posey (1986) even argued that a good supervisor is a good supervisor anywhere. In fact, "Patterns of executive behavior...are so consistent that they are even predictable" (Sorcher, 1985:4). Bailey (1983) notes that successful company presidents share characteristics commonly needed in every job and organization. It seems that executives have the necessary skills to do the job, regardless of their particular organization.

Unfortunately, the early identification of potential executives is not easy. The early identification can be difficult because it is hard to decide whether to choose people who will meet the immediate and obvious needs of the organization, or encouraging the selection of a person who is flexible and diversified. Criteria should be standardized within the organization or company. (Sorcher, 1985:45-47). In searching for people who will be successful Chiefs of Supply, utilizing both options for identification would be ideal. It appears that the broad skill categories for Chiefs of Supply need to be defined.

Search for the Broad Skills Categories

Having identified that Directors of Supply had careers that were extremely simila. to each other, they were asked to complete a a set of critical incidents and a rating form to determine the broad skill categories necessary to be a Chief of Supply. Lt Col Peterson used a three part approach to determine the broad skill categories needed by a COS. First he identified the skill categories; next, he collected data on those skill categories; and finally, he analyzed the data (Peterson, 1988c).

Broad Skill Categories. In 1955, Robert Katz wrote an article defining three broad skills categories used by managers and leaders. The theory behind these three categories is that the technical, human, and conceptual skills are capable of being learned. Katz (1974) argues these skills are not considered inborn traits but learnable skills (Katz, 1974:98).

As part of the 1955 article Katz defined and provided examples of these three broad skill categories. According to Katz (1955), technical skills are the proficiency in, or understanding of, specific activities requiring the use of specialized procedures, techniques, tools, methods, processes, or knowledge. Technical skills are primarily concerned with working on a specific task. A Chief of Supply is expected to have a full repertoire of technical skills associated with the Air Force supply system. These technical skills may be acquired in a variety of ways.

Early in a supply officer's career, usually within six months after entering the career field, the officer attends a basic supply

officers course for ten weeks of technical training. This training, conducted by Air Training Command (ATC), gives them the basic knowledge of how a supply squadron functions day-to-day. ATC's charter is to provide technical training, exclusive of any leadership or management training, and is designed to be the lead-in to on-the-job training conducted at the individual's home base (Illsley, 1989). Technical skills are taught to junior or company grade officers through the Supply Operations Officer Course (introductory), the Fuels Management Officer course (introductory) and the Advanced Supply Management Course (intermediate) (AFM 50-5, 1989:3-70). Figure 1 contains the official descriptions of the courses. Once the individual returns from technical training, the sometimes formal, sometimes informal on-the job training begins.

For example, one technical skill that a Chief of Supply needs is the ability to interpret inventory effectiveness data. He uses this skill to determine the health of the supply account. But a manager cannot survive with only technical skills (Mann, 1965:73). A large part of any manager's day is continual interaction with other people, a manager in supply is no exception. Interpersonal skills are a part of the human skills category. Katz (1955) defined human skills as those interpersonal skills that are primarily used when working with people. These skills demonstrate the ability to work with others, to communicate effectively, to resolve conflict, and to be a team player. Human

G30BR6421 002—Supply Operations Officer—POS Code 7NV—Lowry/10 wk 1 day/AFSC 6421/MASL 0152007—Jun 88

Training in the management of Standard Base Supply Organizations using the S1100/60 computer. Includes introduction to the Air Force Supply System, basic fundamentals of supply issue and requisitioning processes, repair cycle management and support concepts, Air Force equipment management system, stockage policy – part I, stockage policy – part II, warehousing and control, contingency/wartime support, and supply support analysis and career management.

Prerequisites: Commissioned supply officers in the grade of 2d Lt and above with 3 months Standard Base Supply System (SBSS) experience prior to attending this course. International students must be commissioned officers with 3 months SBSS experience with an ECL 70SR.

Quota Control: USAF Officers, HQ AFMPC/DPMAPO, all others, HQ ATC/TTPP

C30ZR6421 000—Fuels Management Officer—POS Code 1P8—00088—Chanute/5 wk/MASL 0152019—Dec 87

Plan, organize, direct, and coordinate fuels operations activities; perform technical fuels operations functions; determine organizational structure; plan use of personnel and space; Establish performance standards, work schedules and priorities, monitors personnel performance and training, quantity and quality control of fuels and liquid oxygen, receipt, storage, transfer and dispensing of fuels, lubricants, demineralized water and liquid oxygen, utilization of permanently installed dispensing systems, air transportable systems, and mobile equipment; automated fuels stock fund accounting and document control; fire hazards, and fuel safety precautions.

Prerequisites: Civilians must be assigned to, or in training for, officer positions at grade GS-7 or higher. Personnel who have graduated from the 303Rb331A 001 or C30BR6431 000 courses need not attend. International students ECL 70.

Special Requirements: Students must bring appropriate utility uniform or clothing.

Quota Control: USAF, HQ ATC/TTPPR, all others, HQ ATC/TTPP

G30AR6424 000—Advanced Supply Management—POS Code 9SC—Lowry/5 wk/MASL 0152023—Mar 89

Provides training for Air Force supply officers and senior enlisted personnel in the knowledge and skills needed to perform duties of a supply manager in the Air Force supply system. Includes supply policy making bodies, weapons systems management, programs to control and protect resources, manpower and personnel, financial management, stockage retention policy, wartime support, fuels management, systems management, supply studies and analysis, special programs, facilities management, logistics interface systems and programs, and future direction.

Prerequisites: SMSgt selectee thru CMSgt and Captains with a minimum of 4 years supply experience. Civilians GS-7 and above or equivalent WL and WS whose duties require either management or evaluation of the Air Force supply system. Personnel who have attended the G30BR6421 002 course within the last 24 months are not eligible to attend. International students with ECL 80SR are eligible to attend after completing the G30BR6421 002 course.

Quota Control: HQ ATC/TTPP

Figure 1. Supply Courses Offered to Supply Officers by ATC (AFM 50-5, 1989 3-70)

skills can include an understanding of behavioral principles, interpers nal relations, motivation, and communication (Katz, 1955:35). So, in addition to technical skills, a Chief of Supply is expected to have a full compliment of these human skills.

A supply officer is given very little formal training in the area of human skills. When attending the technical school the officers do not receive any instruction on how to handle the 40 to 100 people working for them. The residence course classrooms are designed strictly for teaching technical skills. When the officers return to their bases they are initially expected to apply those technical skills. They are introduced to some human skills training through the Lieutenants Professional Development Course and Squadron Officer School (SOS). Human skills training is not provided as extensively as is technical skills training.

An example of a human skill imperative for a Chief of Supply is disciplining subordinates. If a person is caught breaking a regulation, one as minor as needing a haircut, or as important as using drugs, the commander must be able to take disciplinary actions against that individual and not rely on others to take care of the problem. The Chief of Supply, as a commander, must communicate with that individual about the nature of his wrong doings, yet he also needs to ensure fair and impartial treatment.

In addition to the technical and human skills Katz identified, one further skill category. Managers must also be able to look past their own unit to analyze how their actions affect the whole organization. Katz (1955) calls this the conceptual skills category

Conceptual skills are those skills used to coordinate and integrate the activities of the organization toward a common objective. The leader must be able to deal with the organization as a whole. The future of an organization depends on the ability of the manager to visualize how changes affect both the organization as a whole, and all the other organizations it supports (Katz, 1955:35).

Conceptual skills become more important as the officer reaches the mid-level leadership position (Mann, 1965:76). This too is true in the supply career field. A Chief of Supply must be able to understand how his/her actions affect the rest of the organizations on the base which rely on the squadron's services.

An example of a conceptual skill is the hours the Chief of Supply sets for the military vehicle gas station. The people who use the base gas station to fill up their government owned vehicles want 24 hour access. However, there are not enough people assigned to the supply squadron to fill this demand. The hours the COS sets must meet the needs of the base personnel without demoralizing his people and harming the supply account.

In summary, Katz (1955) says the three broad skills categories are learnable. Lt Col Peterson's goal was to determine, using the Directors of Supply, which skill category(s) was needed to be an effective COS. Next is the examination of the methodology used to make that determination.

Data Collection. The data were collected via a three part survey. Twenty three surveys were administered, one to each of the Directors of Supply. All surveys were returned for a one-

hundred percent return rate. The first two portions of the survey were critical incidents. One part asked the Colonels to identify successful critical incidents for a Chief of Supply which they had witnessed in their careers. The second part asked for unsuccessful critical incidents for a Chief of Supply. Each Officer was allowed to give as many examples as they wished. Twenty-five successful and twenty-one unsuccessful incidences were reported (Peterson, 1988b).

Part three of the survey was a rating form listing the three broad skills categories and standard definitions. Using one-hundred percent as if it represented time, the Directors were asked to report what percent of their time they spent on each of the three skills as a COS. Part three was taken after part one and two were completed (Peterson, 1988b).

Data Analysis. Part three of the survey was analyzed first A range, mean, and ranking for the rating was used to determine the average amount of time the Directors spent in each of the three categories as a COS, and in which category most of the time was spent. The Directors of Supply reported that the majority of their time was spent using human skills, conceptual skills were the second most important, and technical skills were the least important skill at the Chief of Supply level (Peterson, 1988b).

A content analysis of the critical incidents was used on the data from parts one and two of the survey. Three independent raters, who were knowledgeable about supply but not familiar with Katz's three skill categories, analyzed each critical incident. They

were given the three categories along with the same definitions given to the Directors of Supply in part three. The raters were then instructed to read each critical incident and identify which skill category the incident demonstrated. Each rater worked separately (Peterson, 1988b).

Table 1
Broad Skills Category Ranking
(Peterson, 1988b)

	Percent of Time Spent for Each Category		
	Range	Mean	Rank
Technical	5-50	22	3
Human	20-70	50	1
Conceptual	18-70	28	2

When the raters had completed the surveys, the results were compiled. First, the interrater reliability was computed. Since the surveys were scored independently, the ideal results would be that each critical incident was the same between raters. For every successful critical incident, if all three raters agreed on the skill category, the reliability was rated 100 percent. If only two agreed, the reliability was 67 percent. If none of the raters agreed, the score was zero. A zero was used to keep the results

conservative. A percentage was calculated for each of the 25 critical incidents, summed and divided by 25. The result is a percentile. The same procedure was used for the unsuccessful critical incidents. The overall result of the calculations is the interrater reliability rate. According to Peterson, a reliability of greater than 75 percent is acceptable. This survey's interrater reliability was extremely high. The interrater reliability rating was 88 percent for successful and 89 percent for unsuccessful incidents (Peterson, 1988b).

Since the Directors reported that 50 percent of their time was spent on human skills, the hypothesized results of the critical incidents analysis is that approximately 50 percent of the successful incidents for a COS used human skills. The actual percentage in which human skills were used was 60 percent. In unsuccessful incidents, the human skill was missing 57 percent of the time. All results of the analysis are shown in Table 2.

Lt Col Peterson's results from three different tests support the conclusion that the skill category present in successful Chiefs of Supply and absent in unsuccessful Chiefs of Supply was the same, i.e. the human skills category. Based on these results, the human skill category is apparently the most important category for a COS, followed next in priority by the conceptual skill category. This agrees with Katz's works completed in 1955.

The executive board, based on the findings of the survey, determined that the presence of a portfolio of human skills were what makes the difference between supply officers selected for COS

and those not selected. However, the category of human skills is too broad, and a more specific set of skills is needed. The objective of future research should be to define a set of skills from which a training program could be established (Peterson, 1988b). The purpose of this research is to determine what specific human skills are needed to be a successful Chief of Supply.

Table 2
Critical Incidents Findings
(Peterson, 1988b)

	Findings		
	Mean Rating	Successful Incidents	Unsuccessful Incidents
Technical	22	12%	19%
Human	50	60%	57%
Conceptual	28	28%	24%

Research Objectives

This research will focus on:

1) Identification of core human skills necessary for Chiefs of Supply.

2) Determine which of the identified core human skills require development in today's company grade officers.

3) Identify means of delivery for the core skills.

Investigative Questions

Each of the research objectives was needed to generate the investigative questions.

(1) What human skills are critical for becoming a successful COS?

(2) Are supply officers deficient in those critical human skills?

(3) If supply officers are deficient, what method(s) is most appropriate for improving supply officers human skills?

Chapter II will review the human skills literature. From that literature, a skills list will be built and used to design a survey. Chapter III discusses the methodology used to analyze the results of the survey. Chapter IV reports and discusses the findings. Chapter V provides conclusions and recommendations.

II. Literature Review

This chapter will review the broad skill categories discussed in Chapter I. Each category will be discussed and examples given. From that review, the broad skill category most important to the mid-level manager will be identified so that specific skills necessary for today's manager can be identified. The review of specific skills will culminate in the development of a list of trainable skills.

Robert L. Katz

In 1955 the Harvard Business Review published an article by Robert L Katz entitled "The Skills of an Effective Administrator." In this article Katz, used first hand observation of executives at work, and current field research in administration, to present a new way to select and train executives. At that time industry was searching for personality traits and attributes that would identify the "ideal" executive capable of dealing with any problem, at any time, in any organization. Katz (1955) proposed that it was the skills with which an administrator accomplishes his task, and not his traits, which make him effective. In this context, "A skill implies an ability which can be developed, not necessarily inborn, and which is manifested in performance, not merely in potential" (Katz, 1955:33-34). Because skills are developable and measurable, it is possible to select administrators based on their ability to perform effectively and not on the traits they possess

An administrator is someone who directs people and obtains certain objectives through the directing of others. Katz (1955) proposed a taxonomy of three managerial skills necessary to be a successful administrator: technical, human, and conceptual (Katz, 1955:34). These three categories are very broad but they are the core set of managerial skills necessary to become a successful administrator.

These broad skills are so closely related to each other that it is often difficult to determine where one skill ends and the next begins. However, despite their interrelatedness, these skills can be examined separately to determine their importance as the level of managerial responsibility varies.

Technical Skills. Technical skills are those skills using specialized knowledge to perform a specific task. This implies an understanding of, or proficiency in, specific tasks requiring particular methods, processes, procedures, techniques, or specialized tools (Katz, 1955:34). When a pilot flies his airplane, he is using a set of technical skills. Likewise, when a manager reads a computer printout of the day's property transactions, he is using his technical skills to assess the productivity and efficiency of his subordinates. These skills have the greatest importance at the lower levels of management (Katz, 1955:37). A supervisor must be able to demonstrate technical competence to his subordinates in order to train and evaluate that subordinate in a specific task.

Technical skills are the most observable skills because they are concrete, they are concerned with objects and processes rather

than people. People are hired to perform their own specialized function at this level, because the skills are concrete and easy to develop. Katz (1955) and Mann (1965) state that technical skills are trained through formal training in professional schools, vocational schools, on-the-job training programs, or a combination of academic and apprenticeship programs.

Human Skills. Human skills are primarily concerned with the ability to work with other people effectively. Human skills refer to the ability to understand and motivate individuals and groups, communicate effectively, and resolve conflict (Katz, 1955:34). The mid-level supervisor must be able to convey through words and actions his expectations to his subordinates. Communication to a subordinate about performance is also a human skill.

Human skills are less observable than are technical skills because they involve people's perceptions. It is imperative that the administrator be consistent in his performance and in his actions. Because human skills are an integral part of everyday actions, it is much easier to describe inadequate human skills than to describe highly skillful performance (Katz, 1955:35).

Although difficult, human skills can be developed without formalized training, but most individuals require some form of coaching. Several methods of performing the coaching are personalized instruction, group role playing, classroom instruction, and supervisor involvement on-the-job. While learning by using

only a textbook is valuable for human skills, it is important to have interactive methods of learning (Katz, 1955:41).

Conceptual Skills. Conceptual skills are those skills used to coordinate and integrate the activities of the organization toward a common objective. The leader must be able to deal with the organization as a whole. The future of an organization depends on the ability of the manager to visualize how changes in the organization affect both the organization as a whole, and all the units it supports (Katz, 1955:35).

Conceptual skills are an abstract concept, yet these are the skills that are most important at the top level (Katz, 1955:38). For example, a top level manager must be able to determine emphasis and priorities among conflicting objectives. The administrator must be able to visualize the future of the organization and predict where the organization must head to remain successful. The future of the organization depends on the ability of the leader to determine the social and political forces that affect the business (Katz, 1955:36).

One way managers can develop better conceptual skills is through coaching by superiors. Success depends on the supervisor's abilities and his willingness to help. Other ways to develop conceptual skills involve special assignments, management boards, specific complex situational classroom exercises, and on-the-job learning (Katz, 1955:41).

Concentrating on the skills of an administrator, offers a frame of reference that is more directly applicable to performance

measurement and subject to less misinterpretation. In 1965, Katz's work on the three core skills was replicated and validated by Floyd C. Mann, who studied the leadership role in a formal organization. Mann's work will be discussed next.

Floyd C. Mann

Floyd C. Mann published an article, entitled "Toward an Understanding of the Leadership Role in Formal Organizations," in the book Leadership and Productivity. In this article, Mann (1965) discusses his concept of the role of a supervisor, manager, or leader in a large organization. These concepts stem from empirical research findings compiled at the University of Michigan (Mann, 1965:78). The focus rests on what skills the supervisor needs to function effectively on a day-to-day basis. Mann's findings parallel and validate Katz's (1955) research.

Mann concluded that the supervisors role, at any level in the organization, is to function as the linking pin integrating subordinate needs with organizational goals. As such, the supervisor performs several functions: 1) directing and coordinating subordinate tasks and activities, 2) relating those tasks to other work groups functioning at the same level, and 3) relating the group activities to the next higher and lower levels in the organization. To do this he must possess three essential skills: technical competence, human-relations competence, and administrative competence (Mann, 1965:70-73).

Although Mann (1965) and Katz (1955) named their skill categories differently, they are essentially the same set of skills. Both authors recognize that all supervisors must have a minimum level of all skills, but both authors also note that the amount may vary with job responsibility.

Technical Skills. Technical skill or competence is the direction of performance, the performance of specific tasks and activities that require the ability to use pertinent knowledge, equipment, techniques, and methods (Mann, 1965:73). The higher the specialization, the greater the need for technical competence. Technical skills are generally associated with concrete tasks, motor skills, and task competence; however, they can also be associated with particular professional roles and affiliations (Mann, 1965:74). A doctor requires the ability to diagnose and treat a patient and may even be required to perform surgery. While these tasks are somewhat abstract, technical competence and technical skills are required for successful accomplishment of the doctor's role.

Human-Relations Skill. Human-relations skill or competence is the ability to use pertinent knowledge and methods to deal with people effectively. This involves working with and through subordinates, other supervisors at the same level, superiors, and occasionally specialists from within and outside the organization (Mann, 1965:74).

The supervisor needs to be able to use his human-relations skills to integrate the organizational objectives with the individual needs. This requires understanding and identification of the needs

of others in the organization. At times, the administrator will be required to coordinate the goals of superiors and subordinates; at other times the executive will need to create, modify, or shift the goals of the individual to those of the organization. The supervisor with human-relations skills understands the principles of behavior and how they affect not only himself, but others in the organization. The administrator manages the personal relations in a unit by managing the emotional and motivational dimensions of the people around him (Mann, 1965:74-75).

Administrative Skills. Administrative skill or competence is the ability to plan and coordinate activities for the whole organization, assign tasks, and delegate authority and responsibility. All efforts require the administrator to have the ability to think and act in terms of the organization as a whole, and not acting in response to the needs or goals of individuals or groups (Mann, 1965:75).

The administrator must also be able to coordinate the activities of one organization with other organizations as well as people, levels, and departments within his own organization. According to Mann (1965) there is no substitute for administrative competence at the top of the hierarchy.

Parallelism Between Studies. In the two articles written by different people over ten years apart, a set of three core skills were identified as critical to the success of managers. Katz (1955) identified these skills as technical, human, and conceptual. Mann (1965) identified the same three skills but called them technical,

human-relations, and administrative. As shown in the preceding discussions of the two men's work, the skills are one in the same. For simplicity, the skills will be referred to by only one of these names for the remainder of the paper: both used the term technical skills; human and human-relations skills will be referred to as human skills; and conceptual and administrative skills will be referred to as conceptual skills.

Study Results. Supervisors should have a minimum level of the three broad core skills (Mann, 1965:73). However, the skill mix may vary by organization and level of responsibility within the organization. At the lowest levels technical and human skills are the most important. The supervisor must be competent in the specific tasks he/she is responsible for as well as understanding the goals and motivations of the people that work for him/her. Once promoted to mid-level management, technical skills become less important, and the need for conceptual skills begins to increase (Mann, 1965:76-77). At the intermediate or mid-level the manager should be primarily concerned with human skills. (S)he must now be able to recognize where his/her department or unit fits into the organization as a whole, and how his/her actions will affect other parts of the organization. At the top-management level, the human skills become subordinate to the need for conceptual skills. However, the need for sensitivity and self-awareness indicates that human skills are still very important even at the top-management level (Mann, 1965.76, Katz, 1956:37).

Skill Interrelation. Katz (1955), Mann (1965), and Ulschak (1983) all recognize that managers require the ability to translate knowledge into action at each level of responsibility (see Table 3). Executive development programs can benefit both the organization and managers by emphasizing the appropriate skill at each management level. The breakdown shown in Table 3 indicates quantitative training guidelines for each specific skill level as derived by Ulschak.

Table 3
Degree of Competence Required at Each Core Skill Level
(Ulschak, 1983 156)

	Executive	Mid-level	First-line Supervisor
Conceptual	47%	31%	18%
Human	35%	42%	35%
Technical	18%	27%	47%

Impact of Skills Literature Today. In two separate studies Katz (1955) and Mann (1965) determined that a mix of these three broad core skills were essential for success as a manager Over twenty years later these findings and principles are still being

applied. A review of current Principles of Management textbooks, completed by Peterson (1988), reveals the impact of Katz's work in the management field today.

Tim O. Peterson

In 1988 Tim O. Peterson, as part of his dissertation research, conducted a review of 15 Principles of Management textbooks The 15 texts were chosen for examination by three management professors. The textbooks were reviewed for references to Katz's work. Twelve of the 15 texts listed technical, human, and conceptual skills as skills necessary for managerial success; however, many of the books also included new skills. Together the textbooks compiled a core set of the ten skills listed in Figure 2. The additional skills attempt to capture some specific portion of Katz's three broad categories (Peterson, 1988d:23).

From the definitions given in Figure 2, the new skills appear to be subsets of the three core skills defined by Katz (1955) In time, the additional skills may become categories in their own right. Figure 3 represents a pictorial representation of the skills and how they interrelate as conceptualized by Peterson. The administrative skill in Peterson's model acts as the linking pin for all other skills (Peterson, 1988d:23)

The exact set of skills needed to become a successful manager still have not been defined, only the broad categories. The next section will be devoted to compiling a specific list of skills from

current research. Most of the current literature is aimed at leadership, which encompasses many of the human skills.

Skill	Definition
Technical	Ability to use methods, procedures, processes, tools, techniques, and specialized knowledge to perform specific tasks (Katz, 1955, 1974)
Analytic	Ability to identify key variables, see how they are interrelated, and decide which ones should receive the most attention (Ivancevich, Donnelly, & Gibson, 1986; Griffin, 1987)
Decision-Making	Ability to choose effective solutions from among alternatives (Ivancevich, Donnelly, & Gibson, 1986)
Human	Ability to work cooperatively with others, to communicate effectively, to motivate and train others, to resolve conflicts, and to be a team player (Katz, 1955, 1974)
Communication	Ability to send and receive information, thoughts, and feelings, which create common understanding and meaning (Hellriegel & Slocum, 1986; Ivancevich, Donnelly, & Gibson, 1986)
Interpersonal	Ability to develop and maintain a trusting and open relationship with superiors, subordinates and peers to facilitate the free exchange of information and provide a productive work setting (Griffin, 1987)

Figure 2. A Compilation of Managerial Skills as Identified by Fifteen Principles of Management Textbooks (Peterson, 1988d 24-25)

Skill	Definition
Conceptual	Ability to see the organization as a whole and to solve problems from a systemic point of view (Katz, 1955, 1974)
Diagnostic	Ability to determine the probable cause of a problem from examining the symptoms which are observed by the manager (Szilagi, 1984, Griffin, 1987)
Flexibility	Ability to deal with ambiguous and complex situations and rapidly changing demands (Hitt, Middlemist, & Mathis, 1986)
Administrative	Ability to follow policies and procedures, process paperwork in an oderly manner, and manage expenditures within the limits set by the budget (Megginson, Mosley, & Pietri, 1986).

Figure 2. Continued

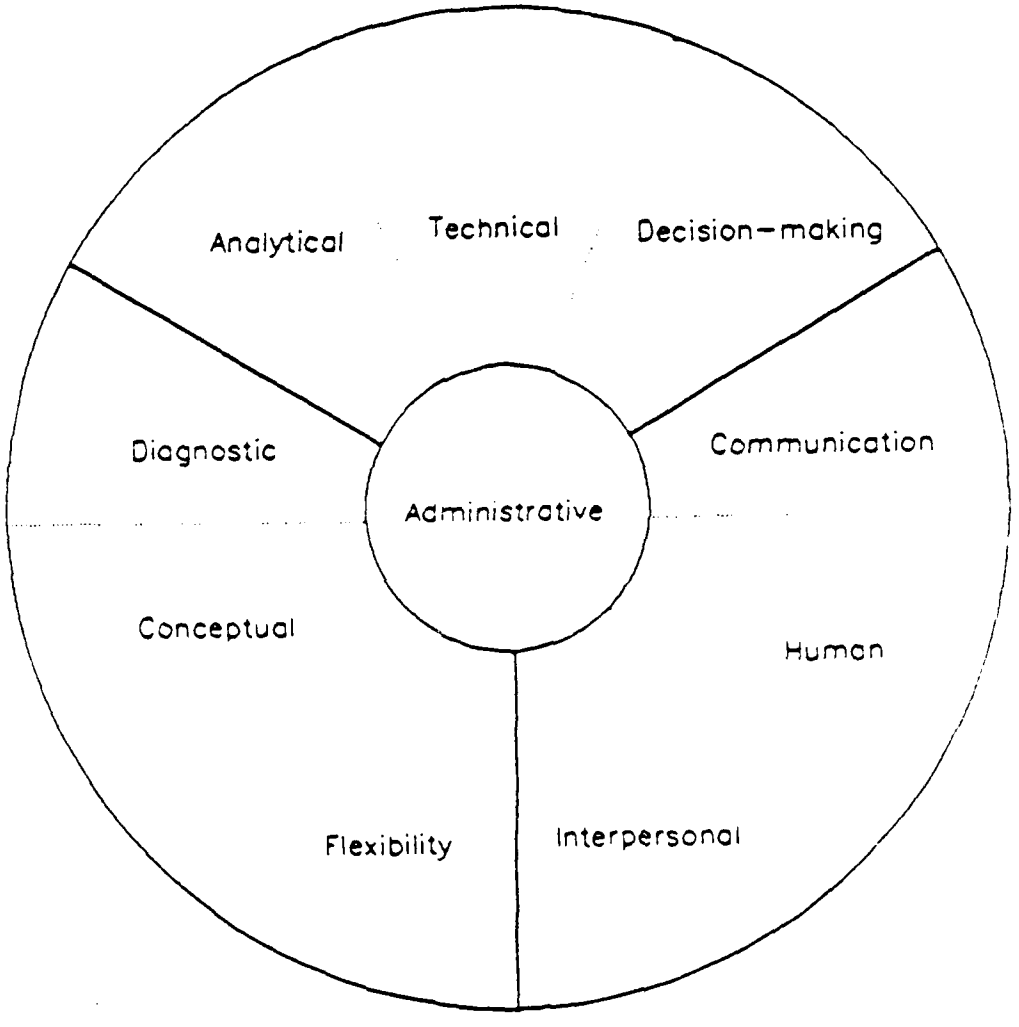


Figure 3 Managerial Skills Model
(Peterson, 1988d 26)

David D. Van Fleet and Gary A. Yukl

In 1986, Volume 3 of Monographs in Organizational Behavior and Industrial Relations, entitled "Military Leadership: An Organizational Perspective" was published. This book looked strictly at the behavior of military leaders, and focused on gaining a better understanding of military leadership. Many previous studies had been accomplished using the military as part of their subject pool, however there was never any clear distinction between military and business leadership, even though there is some evidence that suggests that the two leadership styles are situationally distinct. This distinction is still being ignored today. Much of the leadership training for military members comes without any modification from the leadership theories which are being taught in the business schools (Van Fleet and Yukl, 1986:11).

Broadly defined categories such as those used by Katz (1955), Mann (1965), and Peterson (1988) are too general to provide anything but a simplistic view of leaders. To be able to quantify which leader behaviors are necessary in a good military leader, the broad skill categories must be more specific.

What is needed is a taxonomy that is broad enough to be used in any organization, yet not so detailed that it can only be used in specific situations or organizations. The categories should lend themselves to use by a variety of measurement techniques such as questionnaire, classification by critical incidents, diaries,

direct observation, and other research methodologies (Van Fleet and Yukl, 1986:37).

Method of Van Fleet and Yukl's Study. Yukl and his colleagues, through a 7 year program of research, identified meaningful and measurable categories. The result was 23 distinct behavioral categories of leadership (Van Fleet and Yukl, 1986:37). Van Fleet and Yukl (1986) then used these categories to conduct their study of skills and behavior needed by the military officer. Just as Katz's categories were not entirely independent, neither are these; however, they are conceptually distinct (Van Fleet and Yukl, 1986:37). The 23 categories are listed in Figure 4. Yukl's behavior taxonomy corresponds closely to the topics in the Armed Forces Officer and The US Army Leadership Assessment Categories in Figure 5.

Methodology. Van Fleet and Yukl (1986) tested the taxonomy using a multi-method approach. By doing so they were able to overcome many of the limitations of the previous studies. The multi-method approach used both critical incidents and questionnaire-correlational analysis to examine combat and non-combat behaviors (Van Fleet and Yukl, 1986:46-54). The new taxonomy was also used to perform a career description analysis based on biographies and autobiographies written about military leaders (Van Fleet and Yukl, 1986:65).

Results. The results of the four studies were very consistent despite the differences in methodology (Van Fleet and Yukl, 1986:54). Four behaviors were found to be significant in all non-

combatant situations: inspiration, performance emphasis, clarifying work roles, and consideration. The behavior of criticism/discipline was mentioned in most situations. Four wartime behaviors were mentioned as significant in all combatant behaviors: inspiration, performance emphasis, clarifying work roles, and problem solving. Planning was mentioned as significant in most situations (Van Fleet and Yukl, 1986:91). As expected there were differences in the behaviors necessary during non-combat versus combat situations. Although there were differences in the relationship between the two situations, the results were not dichotomous.

Yukl's Taxonomy

Disseminating Information	Emphasizing Performance
Structure Reward Contingencies	Facilitating the Work
Planning	Innovating
Problem Solving	Managing Conflict
Representing the Unit	Monitoring the Environment
Monitoring Operations	Criticism
Administering Discipline	Delegating
Encouraging Decision Participation	Goal Setting
Clarifying Work Roles	Training-Coaching
Career Counseling	Showing Consideration
Facilitating Cooperation and Teamwork	
Providing Praise and Recognition	Inspiring Subordinates

Figure 4 Yukl's New Taxonomy
(Van Fleet and Yukl, 1986:39)

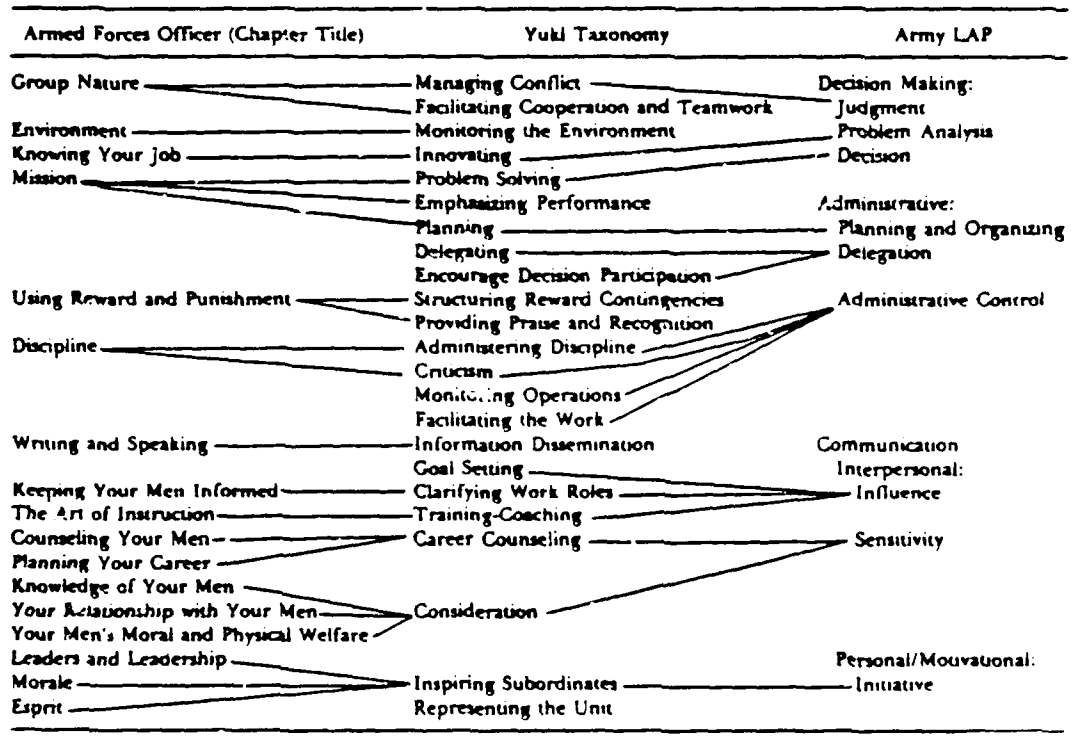


Figure 5. Approximate Correspondence of New Taxonomy with Selected Military Approaches
(Van Fleet and Yukl, 1986:40)

The successful use of multi-method strategy and the superiority of the new behavior taxonomy for describing leader behavior point the way toward greater applications of these methodological innovations in research on military leadership.

especially from a behavior perspective. The implications also apply to the civilian world. An analogy can be made between a combat situation and a dynamic, threatening environment in business, or between a stable, benign situation in business and the non combat situation faced by military leaders (Van Fleet and Yukl, 1986:61).

Gary A. Yukl.

Gary A. Yukl (1988), discussing leader behavior, stated that "A major problem in research on the content of leadership behavior has been the identification of behavior categories that are relevant and meaningful" (Yukl, 1988:92). Over the past four decades many behavioral taxonomies have been devised. Unfortunately what is key to one taxonomy is absent from the next. Sometimes different terms are used to define the same concept and other times the same word is used to define different concepts. Yukl (1988) states that the reason for the differences are: 1) the purpose of the taxonomy, 2) the level of abstraction used in the taxonomy, and 3) the methodology used to build the taxonomy (Yukl, 1988:92).

The lack of similarities between taxonomies, prompted a seven year study by Yukl and his colleagues to identify meaningful and measurable categories of leader behavior. The list used by Van Fleet and Yukl (1986) was from a preliminary report on the seven year study (Van Fleet and Yukl, 1986:37). In 1981, Yukl published the book Leadership in Organizations in which there were 19 categories of leader behavior. When the second edition

was published in 1988, the further research and refinement left the taxonomy with only eleven categories. The progression of the taxonomy is illustrated in Figure 6.

Yukl used a combination of factor analysis, judgmental classification, and theoretical deduction to build his taxonomies (Yukl, 1988:128). The taxonomies were useful in determining what skills managers and leaders need based on research conducted by other people. Henry Mintzberg developed his list of managerial skills by conducting his own empirical research.

Henry Mintzberg

Henry Mintzberg's (1973) book The Nature of Managerial Work, was the beginning of a new era in behavioral science research. His findings generally contradicted traditional beliefs and literature about what managers really do. The work was based entirely on evidence from empirical studies of managerial work. His subjects included: diaries of senior and middle managers; observation of street gang leaders, hospital administrators, and production supervisors; analysis of working records from the Presidents of the United States; activity sampling of foremen's work; and structured observations of chief executive officers. This book focused on what real managers do (Mintzberg, 1973:4)

The study identified five distinguishing characteristics of managers: 1) they work at an unrelenting pace with little or no breaks, often taking work home; 2) the managers activities are

1981	1986	1988
Performance Emphasis	Disseminating Information	Networking
Consideration	Emphasizing Performance	Supporting
Inspiration	Structuring Reward Contingencies	Managing Conflict and Team Building
Praise-Recognition	Facilitating the Work	Motivating
Structuring Reward Contingencies	Planning	Recognizing and Rewarding
Decision Participation	Innovating	Planning and Organizing
Autonomy-Delegation	Problem Solving	Monitoring
Role Clarification	Managing Conflict	Problem Solving
Goal Setting	Representing the Unit	Consulting and Delegating
Training-Coaching	Monitoring the Environment	Monitoring
Information Dissemination	Monitoring Operations	Informing
Problem Solving	Criticism	Clarifying
Planning	Administering Discipline	
Coordinating	Delegating	
Work Facilitation	Encouraging Decision Participation	
Representation	Goal Setting	
Interaction Facilitation	Clarifying Work Roles	
Conflict Management	Training-Coaching	
Criticism Discipline	Career Counselling	
	Showing Consideration	
	Facilitating Cooperation and Teamwork	
	Providing Praise and Recognition	
	Inspiring Subordinates	

Figure 6 Progression of Yukl's Taxonomies

characterized by brevity, variety, and fragmentation; 3) most managers work with current information, little effort is expended on reflective planning; 4) one-third of the managers time is spent communicating with outsiders and another one-third to one-half is spent communicating with subordinates; and 5) two-thirds of the communication is oral, usually by telephone or unscheduled meetings (Mintzberg, 1973:28-41).

The study resulted in several major conclusions. First, despite some exceptions, managers fit into ten roles and six sets of working characteristics regardless of their jobs. Contrary to popular belief, managerial jobs are quite similar. Second, the manager is both a specialist and a generalist. He is a specialist as a manager, yet he is a generalist within the organization. Third, the job of managing is composed of skills which are not well known or understood. The final conclusion is that the manager derives most of his power from the information around him (Mintzberg, 1973:4).

The Roles of a Manager. Mintzberg determined, with no clear justification, that all the managerial activities could be divided into three categories: interpersonal relationships, transfer of information, and decision making (Mintzberg, 1973:55). Mintzberg then used these three groups to categorize the ten managerial roles. The interpersonal roles are the figurehead, the leader, and the liaison. The informational roles are the monitor, the disseminator, and the spokesman. The decisional roles are the entrepreneur, the disturbance handler, the resource allocator, and

the negotiator. These roles are all observable, with some actions actually fitting into several categories (Mintzberg, 1973:55-59). Some of these individual categories correspond to similar findings in the research accomplished by Katz (1955), Mann (1965), Peterson (1988), Van Fleet and Yukl (1986), and Yukl (1988). Each of Mintzberg's managerial roles, except the figurehead role, align with at least one of the categories used by Van Fleet and Yukl. For the figurehead role there was no clear alignment with an existing category. The associations between authors shown in Figure 8 was adopted from Van Fleet and Yukl (1986).

"An important difference between the Mintzberg and Yukl taxonomies is the capacity of Yukl's to describe how a manager relates to his subordinates, directs them, and motivates them (Van Fleet and Yukl, 1986:37). As shown in Figure 7, Mintzberg's leader behavior role corresponds to 12 of Yukl's behaviors. Despite the drawback of Mintzberg's (1973) model, the study of his ten roles provided eight essential skills that managers need and which can be taught (Mintzberg, 1973:188). These eight skills align themselves with the ten managerial roles, providing a method of teaching the specific skills associated with the job of managing. The students of management need to learn peer skills, leadership skills, conflict-resolution skills, information processing skills, decision making skills under ambiguity, resource allocation skills, entrepreneurial skills, and introspection skills (Mintzberg, 1973:188-193).

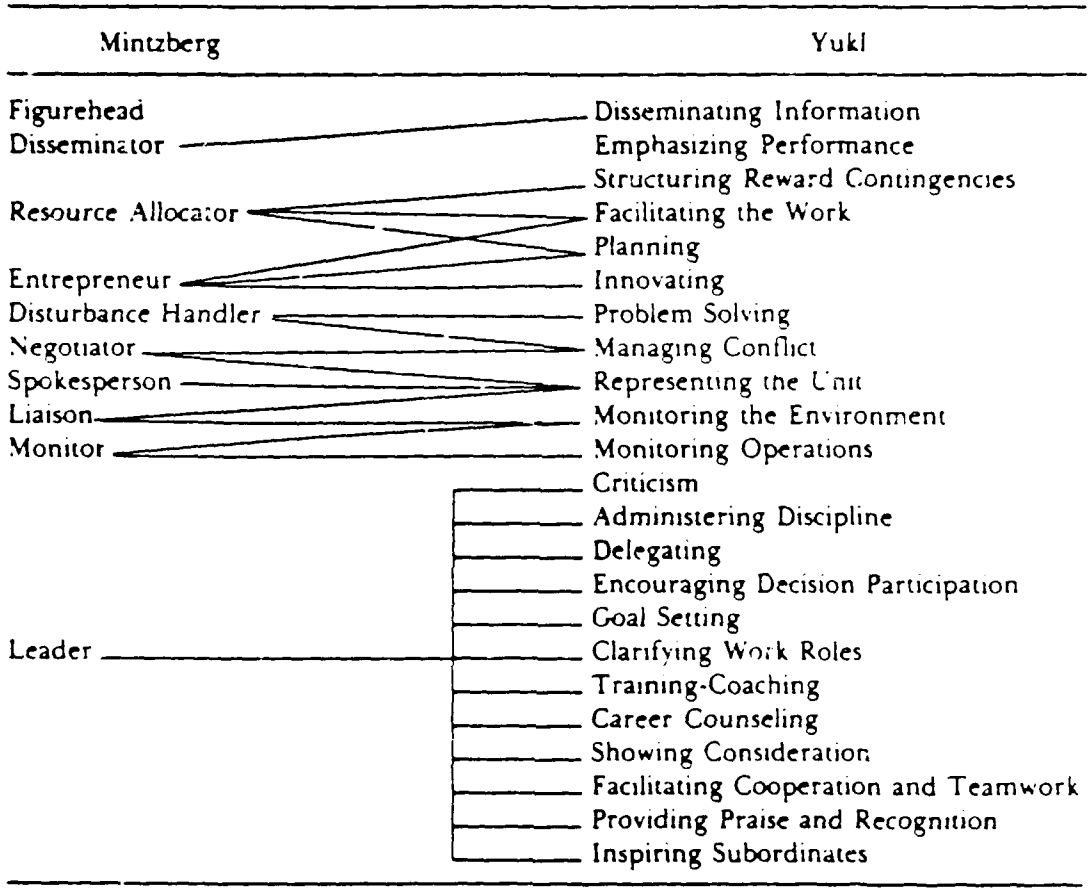


Figure 7 Approximate Correspondence of New Taxonomy With Mintzberg's Taxonomy
(Van Fleet and Yukl, 1986, 40)

Like Mintzberg (1973), Luthans, Hodgetts, and Rosenkrantz (1988) studied managers from all levels. However, their sample studied only middle-of the-road organizations. This study was the first to examine the day-to-day routines of managers (Luthans, et al., 1988:xiii).

Fred Luthans, Richard M. Hodgetts, and Stuart A. Rosenkrantz

The book Real Managers, by Luthans, Hodgetts, and Rosenkrantz, was the culmination of a four year study, using multiple methods of data collection. The goal of this book was also to replace the myths regarding the nature of managerial work, with a systematic analysis of what real managers do on a day-to-day basis. The authors are the first to empirically examine managers at all levels using middle-of-the-road organizations. Luthans, et al. also explored the differences between effective managers and their unsuccessful counterparts (Luthans, et al., 1988:xiii-xv).

The study utilized unstructured observation, trained observers in natural settings, intensive interviews, and standardized questionnaires to gather data. Unstructured observation was conducted using forty-four managers who were observed for 440 hours over a two week period. The results are summarized in Figure 8. This information was then validated by interviewing 165 different managers. Once Luthans, et al. were satisfied that they had an accurate representation of what real managers do, they focused on the relative occurrence of these

activities by observing 248 different managers. The resulting distribution of real managers activities, are shown individually in Figure 9 and summarized into four categories in Figure 10 (Luthans, et al., 1988 24-27). The distribution of activities reinforces Mintzberg's (1973) findings that managers perform many tasks, requiring many skills.

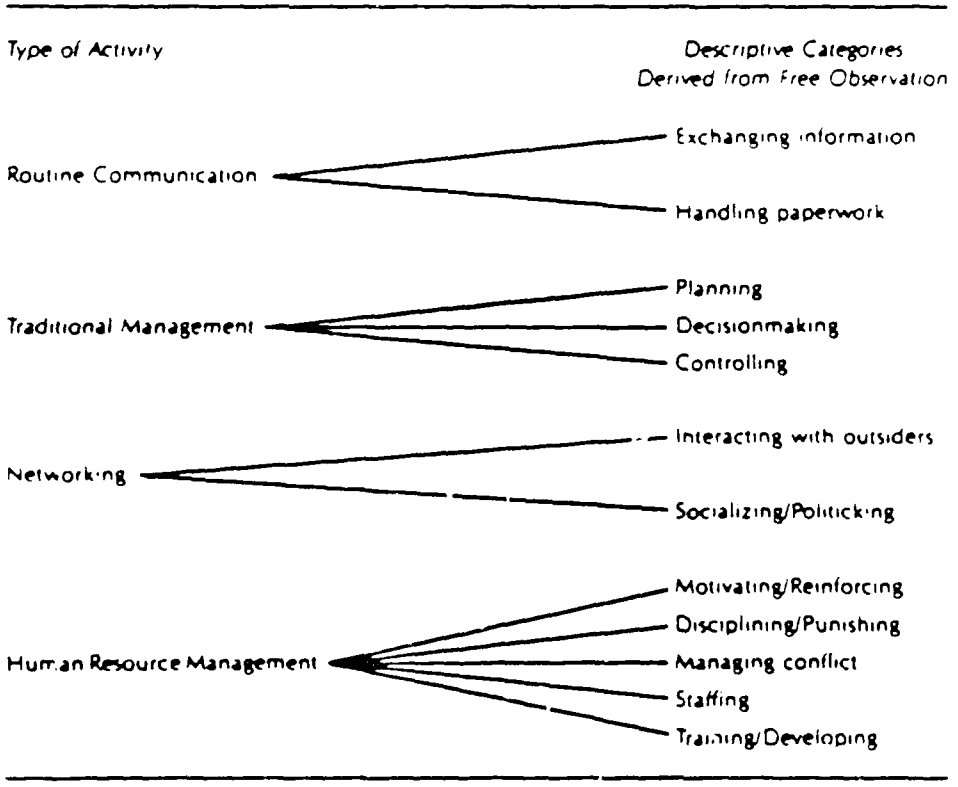


Figure 8 Real Managers' Activities
(Luthans, et al., 1988 12)

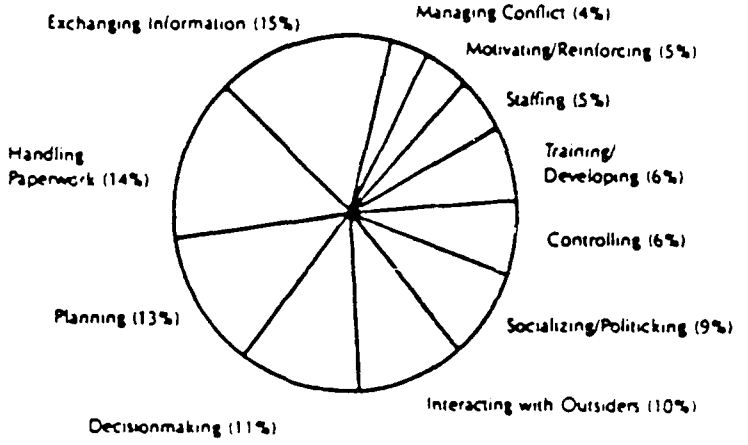


Figure 9. Distribution of Real Managers' Activities
(Luthans, et al., 1988:26)

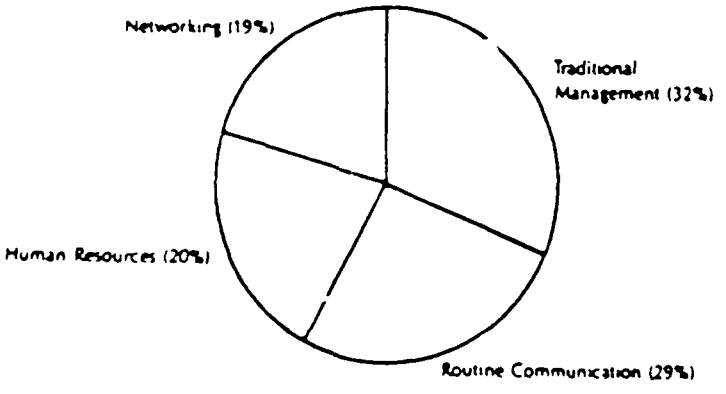


Figure 10. Distribution of Real Managers' Activities Summarized
(Luthans, et al., 1988:27)

The approximate correspondence between Luthans and others skills and Yukl's taxonomy is shown in Figure 11. As shown in Figure 11, with the exception of staffing, managerial activities identified by Luthans, et al. (1988) generally correspond to Yukl's taxonomy.

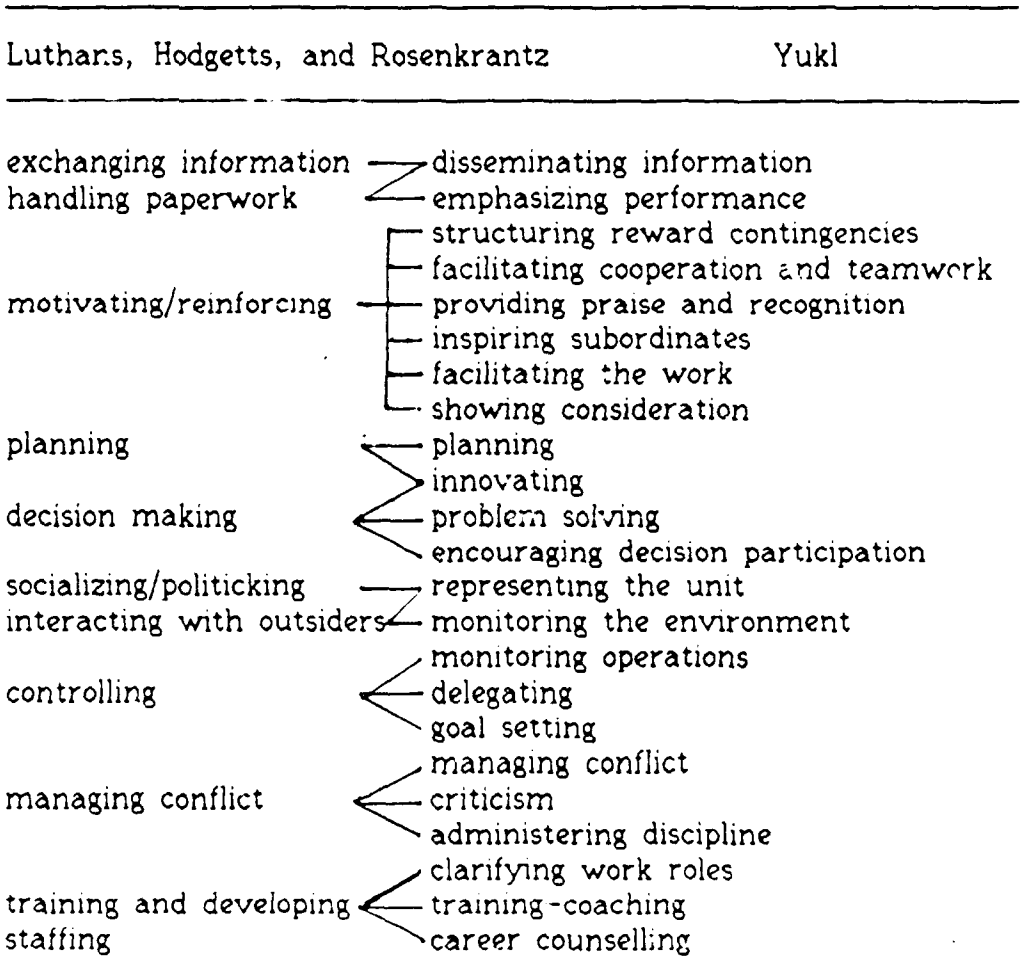


Figure 11. Relationship Between Luthans', Hodgetts' and Rosenkrantz's Activities and Yukl's Taxonomy

Mintzberg (1973) stated that one-third to one-half of the manager's job is communicating with subordinates and another one-third of their time communicating with people outside the organization. Luthans, et al. (1988) showed managers using 29 percent of their time for routine communication. Yukl uses only disseminating information to account for the communication process. He does not specify the amount of time spent disseminating information (Van Fleet and Yukl, 1986:37).

Even though the amounts of time spent in communication is not constant, communication is still shown to have a great impact on the effectiveness of the manager. Because of this, communication in the work place will be investigated in more detail in the next section.

Larry E. Penley and Brian Hawkins

The topic of communication was not specifically addressed by Van Fleet and Yukl (1986). They combined many types of communication into a broad category labeled disseminating information. Mintzberg (1973) uses the roles of monitor, disseminator, and spokesman to fulfill the information or communication activity. Luthans, et al (1988) describe communication through the activities of exchanging routine information and handling paperwork.

All communication within an organization is not the same. Focusing on the purpose or content of communication clarifies the role communication plays in the organization and integrates communication directly into leadership. Larry E. Penley and

Brian Hawkins published an article titled "Structuring Interpersonal Communication in Organizations: A Leadership Application." Their purpose was to develop measures on content-oriented dimensions of organizational communication to measure interpersonal communication between superiors and subordinates, and to describe the interpersonal communication that subordinates associate with leadership (Penley and Hawkins, 1985:309-310).

Data were collected from 150 randomly selected people out of an organization of 600 people via questionnaire. Their study focused on five categories of supervisor/subordinate communication: task communication, performance communication, career communication, communication responsiveness, and personal communication (Penley and Hawkins, 1985:313).

Task communication measures the extent to which supervisors explain policy, job requirements, and changes in the work place (Penley and Hawkins, 1985:313). This skill relates to Van Fleet and Yukl's skills of facilitating work and clarifying work roles.

Performance communication measures the extent to which supervisors communicate how well a subordinate is doing in his job or the quality of his output (Penley and Hawkins, 1985:313). This skill relates to Van Fleet and Yukl's skills of providing praise and recognition, emphasizing performance, and monitoring operations.

Career communication measures the extent to which supervisors provide career guidance and training opportunities to

subordinates (Penley and Hawkins, 1985:314). This skill relates to Van Fleet and Yukl's skills of career counselling and training-coaching.

Communication responsiveness measures the extent to which a leader listens and provides feedback to subordinates' questions or actions (Penley and Hawkins, 1985:314). This skill does not have a direct relationship to any of Van Fleet and Yukl's skills, but can be divided into two separate categories, listening and feedback.

Personal communication measures the extent to which supervisors and subordinates discuss non-work related issues such as family and hobbies (Penley and Hawkins, 1985:314). This skill also does not have any direct relationship to Van Fleet and Yukl's skills.

The results of the study show that although communication can be measured, it is the perception of communication behaviors rather than the actual communication behaviors that are measured. This is true because communication is not only measured by what is said to subordinates, but also how it is said. Because of this, behavior patterns cannot be presumed to produce consistent stable results, regardless of the situation. However, the leaders who were perceived as showing consideration were also those perceived to communicate better, thus they were more effective (Penley and Hawkins, 1985:319-323).

Daniel Katz and Robert L. Kahn. Katz and Kahn (1978) also discuss the importance of communication. They stated that there are five types of superior-subordinate communication: job

instruction, job rationale, procedures and practices, feedback, and indoctrination of goals (Katz and Kahn, 1978:440). Figure 12 shows the relationship between the communication categories from the two studies.

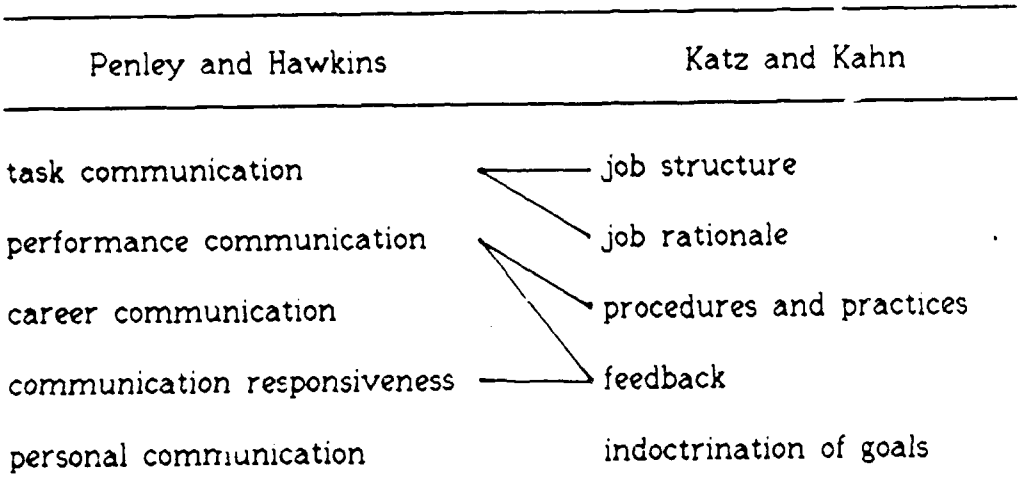


Figure 12. Relationship between the Communication Skills of Penley and Hawkins Versus Katz and Kahn.

Other Significant Works

While the authors reviewed above provided many skills necessary for effective leadership, management, and administration, their lists are not all inclusive. Other authors have documented skills in addition to those previously listed which are important in ensuring managerial effectiveness.

David A. Whetten and Kim S. Cameron. Cameron and Whetten conducted an extensive literature review and studied over 400 practicing managers from private and public organizations.

The result was a list of nine critical management skills based on four general criteria. First, a combination of stress management and conflict resolution skills are a prerequisite for effectiveness. Second, the focus is on characteristics of fundamental management topics based on organizational behavior theory and research. Third, the list of skills is composed only of trainable characteristics. Lastly, the skills were selected because of their applicability to most organizational and managerial positions (Whetten and Cameron, 1984:5). The nine skills are: developing self-awareness, managing personal stress, solving problems creatively, establishing supportive communication, gaining power and influence, improving performance through motivation, delegating and decision making, managing conflict, and conducting effective group meetings. (Whetten and Cameron, 1984:6). Of the skills presented, four are different than those previously discussed. The newly identified skills are developing self-awareness, managing personal stress, gaining power and influence, and conducting effective group meetings.

John J. Morse and Francis R. Wagner. Morse and Wagner developed an instrument to evaluate effective managerial performance. The instrument, developed from interviews and reviews of organization behavior and managerial performance, was reviewed to identify concrete elements of behavior associated with effectiveness. The 106 item statements, from the questionnaire, are based on Mintzberg's (1973) nine managerial roles. The roles are strategic problem solving, resource managing, conflict

handling, organizing, information handling, motivating, providing for growth and development, coordinating, and managing organizational environment. (Morse and Wagner, 1978:23-24).

A revision of the instrument combined several of the categories and resulted in a six factor instrument. These six factors, although distinct, all interrelate to show the similarities and differences of managerial work. The new characteristics are: managing the organization's environment and its resources, organizing and controlling, handling information, providing for growth and development, motivating and handling conflict, and strategic problem solving (Morse and Wagner, 1978:25-28). Each of these six roles correlate to existing skills used by Van Fleet and Yukl (1986).

Richard E. Byrd. Richard Byrd (1987) in his article "Corporate Leadership Skills," noted that with a constantly changing environment the traditional categories of planning, controlling, leading, organizing, and motivating are no longer adequate. These five categories work well within a closed system or a clearly defined organizational structure; however, today's managers must also work outside the well defined structure. To do so, new skills are needed by managers at every level of the organization. These new skills can still be described using the old-fashioned term leadership (Byrd, 1987:35).

Byrd (1987), through his experiences and literature, synthesized the needs of leaders into five categories. His categories include: anticipatory skills, visioning skills, value-congruent skills

empowerment skills, and self-understanding skills. Within each category he listed several specific skills (Byrd, 1987:35-36).

Anticipatory skills focus on serving the customer in new ways. To do this a manager must be able to communicate a shared understanding, and use networking to build commitment rather than compliance. The manger also needs to have political skills to cope with conflicting requirements (Byrd, 1987:37-38).

Visioning skills are the ability to create verbal and mental pictures of the future of the organization. It involves having the foresight to see where the organization is headed, then using subordinates to help shape that vision. Involving the subordinates will help ensure commitment (Byrd, 1987:38).

Value-congruence skills utilize the basic assumptions and beliefs about the nature of the organization, mission, people, and relationships within the organization. The leader must know and understand the values of the organization. The leader must then act consistently, following his principles and those of the organization, and teach those values to his subordinates (Byrd, 1987:39).

Empowerment skills are used to unlock the motivation of others through delegation of authority. Leaders gain power by encouraging employee development, not by stifling it (Byrd, 1987:40).

Self-understanding skills allow a leader to recognize his strengths and weaknesses. A leader can build a staff that will compensate for his shortcomings, once they are recognized and

capitalize on his strengths. A leader must be open to feedback and have an appetite for self-learning and development (Byrd, 1987:41-42).

James W. Hall-Sheehy. Upon return from Vietnam, Hall-Sheehy searched for a managerial job. He noticed resistance of employers to hire Vietnam veterans. Once he obtained a managerial job he set out to determine if any one else had experienced the negativism he did. During his search for others, he also wanted to determine what skills these managers had used in Vietnam that carried over to the business world. The useful skills he identified are: listening, delegating, communicating, working with others, working well under pressure, and having a willingness to question existing policies and procedures (Hall-Sheehy, 1986:117-125).

The Supply Officers Guide Supplement. The supplement to the Supply Officers Guide primarily focuses on supervisory interviewing. The topics used during interviewing a subordinate can be directly related to skills necessary for an effective manager. The supervisor conducting the interview needs to possess the skills of clarifying the individual's work roles, explaining performance expectations, providing feedback, discussing personal-problem solving, and providing career counseling (Howard, et al., 1988:18-23). This supplement has no empirical basis for selection criteria. The authors and reviewers compiled the list based upon their own experience in supply organizations.

Personal Experience. Finally, my four years experience at base level supply has provided me with some insight as to what skills are necessary for effective leadership as a Chief of Supply. Several skills considered important were not encountered during the review of literature. They are: enthusiasm, truthfulness, flexibility, judgement, gaining subordinate and supervisory trust, and getting along with people.

Building a Skills List

A common list of skills was derived from all the proceeding sources. Duplicate ideas, although good for verification, have already been identified; therefore, they will not be referenced for the remainder of this paper.

Prior to the completion of the study by Van Fleet and Yukl (1986), all studies of organizational behavior related to the business world. Military people were used during the study, but separate results were never published. Van Fleet and Yukl determined that the military manager/leader, although having many similarities with corporate executives, did require some different skills to function effectively (Van Fleet and Yukl, 1986:61).

The review of literature was aimed at exploring current and past literature to determine what skills were needed for leaders to be effective. As noted above, the military does have some different requirements than does the business community However, many military training programs still teach strictly from

research aimed at the private sector. Van Fleet and Yukl's skills list was valid and reliable when used for both the military and civilians. They also had figures which provided approximate correlation to Mintzberg's (1973) ten managerial roles which were based solely on civilian leaders. As Mintzberg (1973) points out, all managerial jobs are similar regardless of the place of employment. Because of this similarity, correlations between military leaders and civilian managers is still meaningful. The list of skills to be tested are shown in Figure 13.

Training Needs Analysis

Quite often when a manager senses a human performance problem the immediate response is to invent or build a new training program to correct the deficiency. Unfortunately, by reacting quickly the obvious solution probably will not fix the real problem (Zemke and Kramlinger, 1988:3). What is really necessary is a determination of organizational needs. Three questions need to be answered during analysis: Where is the training needed? What skill(s) is needed to perform the job effectively? and Who needs what kind of training? (Wexley and Latham, 1981:28).

Summary

Through a search of the literature the three broad skills categories were identified: technical, human, and administrative. Once the broad categories were identified, the focus of the research shifted to the category needed most by the mid-level manager.

Human Skills

Emphasizes Performance	Inspiring Subordinates
Provides Praise and Recognition	Structures Reward Contingencies
Clarifies Work Roles	Set Goals
Delegates	Plans and Organizes
Foresight	Solving Problems
Facilitates Teamwork	Manages Conflict
Criticizes	Administers Discipline
Task Communication	Performance Communication
Career Communication	Personal Communication
Written Communication	Listens
Acts Consistently	Flexibility
Patience	Questions Policies and Procedures
Communicating a Vision	Networking
Monitors Operations	Monitors the Environment
Control	Commitment to a Vision
Trust	Truthfulness
Enthusiasm	Decision Making
Allocates Resources	Entrepreneur
Peer Team Building	Introspection
Conducts Effective Group Meetings	
Managing Stress	
Communicating a Shared Understanding	
Negotiation	Liaison
Judgment	Interacting with Superiors

Figure 13 List of Human Skills compiled from the Literature Review

the category containing human skills. By examining the available literature a specific list of human skills needed by managers was developed. The next step is to determine which of these human skills are needed by supply officers. Chapter III will discuss the methodology used to determine what those skills are, and identify the steps taken to answer the research objectives in Chapter I.

III. Methodology

The purpose of this study was to propose answers to the research questions listed in Chapter 1. The following sections describe specific methodology information in five sections: Justification of the Survey, the Population, the Survey Instrument, the Data Collection, and the Data Analysis.

Justification of the Survey

Primary data was required since the information necessary to complete this study was not available from any known source. Of the methods available-- observation, experimentation, personal interviews, telephone interviews, personally administered surveys, and mail surveys--the researcher deemed a mail survey the most appropriate, based upon the population size (discussed later), limited time, and monetary constraints.

According to Emory (1985), mail surveys usually cost less, allow contact with people otherwise inaccessible, allow respondents more time for completion, and provide more anonymity. A major weakness of the mail survey is inaccurate responses due to lack of knowledge. Another drawback can be non-response.

The response rate was not anticipated to be a problem, since the traditional response rate for Air Force Institute of Technology (AFIT) surveys has been sufficient to allow adequate statistical analysis. A problem with inaccurate data was not anticipated since the population had been limited to personnel within the

supply career field, thus the respondents would all have adequate knowledge of the subject matter.

Population

The population of interest for this study was Air Force supply officers, subdivided into two different sub-populations. The first sub-population, the largest, included all supply officers holding the rank of First Lieutenant thru Major with less than three years time in grade. Second Lieutenants were excluded because of their limited experience not only in the Air Force, but more importantly, in supply. That lack of experience could cause inaccurate responses due to insufficient knowledge, and this erroneous data could skew the results of the study. The other sub-population consisted of all Chiefs of Supply; selected specifically because they occupied the position of intent.

There are 761 personnel in the supply officer sub-population. The Chiefs of Supply totaled 96, for the total population surveyed was 857. The relatively small population allowed the survey to be conducted as a census rather than a representative sample. The Air Force Military Personnel Center (MPC), Randolph Air Force Base Texas, generated the names and mailing labels using the ATLAS data base, which contains all active duty personnel information.

Survey Instrument

Two separate questionnaires were specifically developed for this research and provided the means for data collection. The

questionnaires were based on the skills list derived from the literature review, previously discussed in Chapter II. The supply officer survey contained four sections, while the Chief of Supply survey omitted section IV due to its non-applicability for that sub-population. The questionnaires for the Chief of Supply and Supply Officer are displayed in Appendix A and B respectively.

Section I. This section consisted of fourteen questions regarding personal background information on each respondent such as current job, grade, and sex.

Section II. This section contains a list of 45 human behaviors exhibited by managers performing their daily duties. The respondent were asked to use a seven-point Likert scale to rate how important they felt each behavior was for a Chief of Supply. The scale contained the following categories:

(1) Unimportant
(2) Very Rarely Important
(3) Rarely Important
(4) Sometimes Important
(5) Often Important
(6) Very Often Important
(7) Extremely Important

Section III. This section contained the same list of 45 human behaviors as in Section II; however, in this portion the respondents were asked to rate their own personal capability to perform those behaviors based on their present knowledge and experience. The seven-point Likert scale was used, however, it was modified to include anchors for only the first, fourth, and seventh points. The anchored points were

(1) Incapable
(2)
(3)
(4) Moderately Capable
(5)
(6)
(7) Extremely Capable

Section IV. This section contained 21 questions regarding the preferred method of training to obtain skill capability. Options such as video taped lectures and computer based learning were listed. As stated earlier this section was not included in the questionnaires sent to the Chiefs of Supply since they were not expected to be recipients of the training.

The last page of the questionnaire was open ended, asking for general comments or elaboration on specific points addressed in the survey. Respondents were also given the opportunity to request a summary of research results.

Validity. Once developed, the survey was pilot tested for internal content validity by administering it to selected AFIT Graduate Inventory Management (GIM) students, AFIT faculty members, and Air Force Logistics Management Center (AFLMC) personnel. Their comments provided information and were used to make the final revisions to the questionnaire. The study has excellent external validity because the survey addresses only the supply career field and statistical inferences can be made about supply officers. However, this study a will have limited external validity if applied to any population other than supply officers,

because the results cannot be generalized to a wider popu.ation of academic interest without modification of the survey instrument.

Approval. The AFLMC, Gunter AFB, Alabama, granted the survey approval, assigning the questionnaire Survey Control Number (SCN) 881176. This SCN expires 31 January 1990.

Data Collection

Each survey package contained one cover letter signed by the researcher, one questionnaire, two optical scan forms, and one pre-addressed return envelope. The outside envelopes were addressed using the mailing labels provided by MPC. Six weeks were allowed for the return of the questionnaire to ensure an adequate amount of time was allowed to receive responses from overseas personnel.

Upon receipt of the responses the optical scan forms were checked for stray marks and administrative errors, then the data were mechanically read into the computer with optical scan equipment and written into the researchers data file. Once on file the data were verified, and misread data was reinput. Fifteen percent of the surveys were then checked manually for transcription accuracy from the questionnaire to the optical scan form.

Data Analysis

All statistical analysis was completed on the AFIT UNIX computer using the Statistical Package for Social Sciences, update

10 (SPSS X). The specific SPSS X subprograms used in the analysis of the data are described below.

Frequencies. The FREQUENCIES procedure was utilized to generate frequency tables, histograms, means, and standard deviations for the variables which are treated individually in Chapter IV. This calculation is not part of the t-test calculation.

Pearson Product-Moment Correlation Coefficient. CORRELATIONS procedure produces Pearson product-moment correlation coefficients with significance levels. These coefficients are a measure of the strength of the linear relationship between two variables.

T-Test. T-TEST compares sample means by calculating the pooled variance estimate (independent samples with equal variances) and the separate variance estimate (independent samples with unequal variances) to test the significance of the differences in means. The output table provides an F-distribution two-tailed probability which guides the decision of which estimate to use. If the p-value of the F-distribution is significant to the .05 level then the pooled variance estimate is used to determine the significance of the differences in the means. Of the p-value is greater than .05 then the separate variance estimate is used.

Oneway. ONEWAY is an Analysis of Variance (ANOVA) statistical procedure that determines variable relationships involving one independent variable. The subprogram provided a listing by category, allowing analysis of which category was statistically different.

Crosstabs. CROSSTABS cross clarifies variable components and presents the results in a two-way contingency table. This is used to examine possible relationships between two variables. CROSSTABS creates the contingency table with associated chi-square statistics and probability for each relationship.

IV. Results

This chapter presents the results of the questionnaire analysis. The early portion summarizes details concerning the survey responses and demographic data collected. The remainder of the chapter focuses on the results and discussion of the research and investigative questions.

Survey Response Summary

A total of 478 questionnaires were returned from the original mailing of 857 survey packages. Five of the respondents no longer fit the criteria and 24 were returned unopened. The four hundred and forty-nine useable packages represent a response rate of 52.4 percent. Nine survey packages were returned after the cut off date for analysis, but have been retained for use in future studies.

The respondents were further subdivided into two categories: Chiefs of Supply (COS) and supply officers. Specifically, 61 out of 96 COS responded for a 63.5 percent return rate; and 388 out of 761 supply officers returned their packages for a 51.0 percent response rate. The return percentages are listed in Table 4. These response rates are considered to be well above average. The normal response rate for a mailed survey without a follow-up is 30 percent (Emory, 1985 172).

Demographic Profile

Demographic data was collected to highlight significant characteristics of both sub-populations, to disclose similarities or differences in traits of the sub-population, and to determine any differences in capability between Chiefs of Supply (COS) and supply officers. From the fourteen background questions used to gather demographic data, a profile of the typical COS and supply officer was developed.

Table 4
Survey Response Percentages

Questionnaire	Mailed	Returned	Return Percentages
First Lieutenant	145	75	51.7
Captain	493	263	53.3
Major	123	49	39.8
Chief of Supply	96	61	63.6
Missing Rank		1	
Total	857	449	

Chief of Supply. The typical COS is a 41 to 45 year old male, major or lieutenant colonel, who was commissioned through either Officers Training School (OTS) or Reserve Officers Training Corps (ROTC). The area of expertise for his undergraduate degree was business, but he has since earned a masters degree. The COS has been commissioned for eighteen to twenty years and has no

prior enlisted service time. He is currently working in his primary Air Force Specialty Code (AFSC), has been at his job for approximately 12 months, and is working for either Strategic Air Command (SAC), Tactical Air Command (TAC), or United States Air Forces Europe (USAFE). For a complete listing of the demographic data for Chiefs of Supply see Appendix C.

Supply Officer. The make-up of the typical supply officer is somewhat different from the COS. The supply officer is also a male, but he is a captain from 31 to 35 years old, commissioned through OTS. Like the COS, he holds an undergraduate degree in business and a masters degree. He has been commissioned between eight and twelve years with no prior enlisted time. The typical supply officer is working in a supply squadron at base level in his primary AFSC. He works for SAC, TAC, USAFE, or Air Force Logistics Command (AFLC) and has been assigned to his current job for less than one year. For a complete listing of demographic data see Appendix D.

General Population. There are several interesting figures in the background information. First, currently 19.5 percent of supply officers are women (Meridith, 1989). The survey response rate for women was twenty percent. Second, over 53 percent of all supply officers, including COS, have their masters degree, and another 24 percent have some graduate work. Third, almost half of the respondents, 49 percent, have no prior service. However, 25 percent have 12 to 14 years of enlisted time, and another 18 percent have 10 to 12 years. With 49 percent having no prior

service and 43 percent having over 10 years of enlisted time, the supply career field is extremely bi-polar. Finally, almost 50 percent of the respondents have less than 12 months in their current job. A complete listing of the demographics for Chiefs of Supply, supply officers, and total population are found in Appendixes C, D, and E.

Research Questions

Research Question 1. The first research objective was to identify the core skills necessary for Chiefs of Supply. The specific objective was to determine what human skills are critical for becoming a successful COS.

To answer this question, the survey respondents were presented with the list of skills and their definitions as developed in Chapter II from the review of literature. These skills were not, however, identified to the participants as human skills. Each person was asked to rate how important they felt each behavior was for a Chief of Supply. They were given a seven point Likert from which to make their choices. Each point was anchored with a degree of importance such as: point 1--unimportant, point 4--sometimes important, and point 7--extremely important. Questions 15 thru 59, Section II, Part I were used to measure these responses.

The questions were ranked using their mean response. The mean was computed using the seven choices listed above. Three separate rankings were computed: one ranking for the Chiefs of

Supply, one ranking for the supply officers, and one ranking for the total population of respondents. The top ten choices are presented from each sub-population with the exception of the COS sub-population. The COS sub-population had two answers with the same mean for the tenth position, so eleven skills are listed. Nine skills are common to each of the three categories, and the supply officer list and the total population list contain the exact same ten skills. In fact, the top three choices in all three categories hold the same rank order.

T-tests were run to compare the COS sub-population to the supply officer sub-population for each of the 45 skills. The pooled variance estimate was used when the variances were equal (using an F value with a two-tailed probability of .05 or less). A separate variance estimate was used for unequal variances. A list of the significant t-tests is listed in Appendix G, Table 10. Eight skills proved to have significantly different means, indicating the two populations did not agree on the behavior's importance. The skills are: providing praise and recognition, clarifying work roles, criticism, written communication, communicating a vision, commitment to a vision, enthusiasm, and communicating shared understanding. Of the skills having significant differences, only one, the importance of providing praise and recognition, was on the COS list, the supply officers list, and the total population list. Another, the importance of COS enthusiasm, was the seventh choice for the Chiefs of Supply, but did not make the top ten list for either of the other two categories. Overall, the t-tests show

that Chiefs of Supply and supply officers think alike when considering the importance of each skill, especially the top ten skills.

Findings Figure 14 provides a graphical representation of the top ten skills each sub-population believed to be important for a Chief of Supply. Table 5 shows the list of skills and their ranking by sub-population. Appendix H displays the results of the top ten responses for all populations by rank and mean. The Chiefs of Supply are summarized in Table 11, the supply officers in Table 12, and the total population in Table 13.

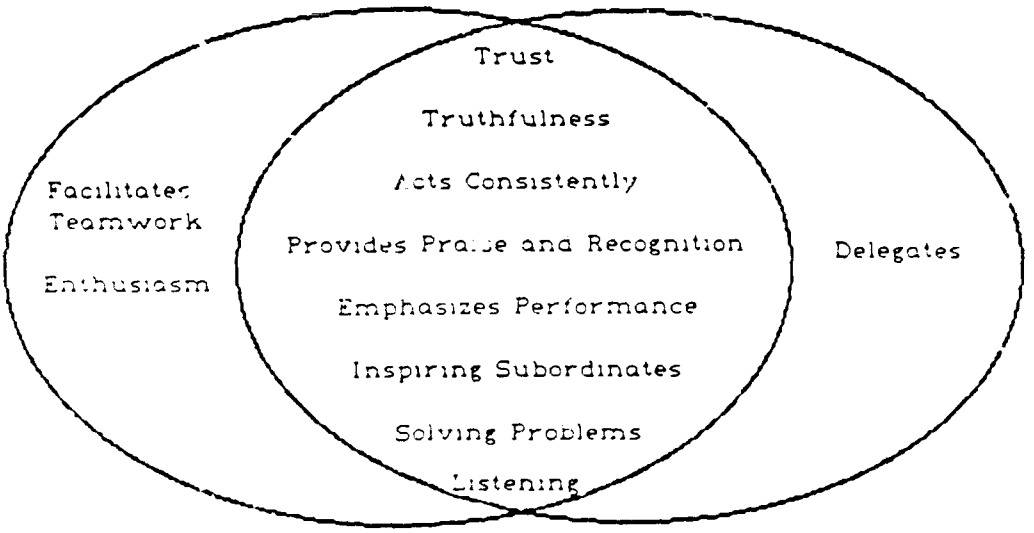


Figure 14 Core Skills Important for Chiefs of Supply

Table 5
Rank Order of Top Ten Importance Skills by Sub-Population

Skill	Total Population	CCS	Supply Officer
Acts Consistently	1	1	1
Truthfulness	2	2	2
Trust	3	3	3
Judgment	4	5	4
Listening	5	6	6
Solving Problems	6	10	5
Provides Praise and Recognition	7	4	8
Inspiring Subordinates	8	9	7
Emphasizes Performance	9	8	9
Delegation	10		10
Enthusiasm		7	
Facilitating Teamwork		10	

Research Question 2. The second research objective was to determine which of the identified core skills were missing in today's supply officers. The specific investigative question asks: Are supply officers are deficient in those critical human skills?

To answer this question, the survey respondents were presented with the same list of skills used for research question 1. Having already rated how important they felt each behavior was for a Chief of Supply, they were asked to rate how capable they felt themselves to be today in performing the given behavior. They were given a seven point Likert scale from which to make their choices. However, this scale used only three anchors, the first, fourth, and seventh points. the three anchors were: incapable, moderately capable, and extremely capable. Questions 60 thru 80, Section III, Part I and Questions 1 thru 24, Section III, Part II were used to measure these responses.

A correlation matrix was calculated plotting the importance of Chief of Supply behaviors against present day capabilities of the behaviors. While there were no negative correlations, neither were there any extremely large positive correlations. The lack of correlation between skills implies that although the skills are positively related, there is no direct relationship between the importance and capability of any of the skills. The correlations between the importance versus capability is listed in Appendix F. Only the skills on the ten most important skills list for a Chief of Supply are displayed

To determine whether training was required, the present capability rating was subtracted from the importance rating for each person. The result was a score that could range from -7 to 7. If the resulting number was negative, then the person felt that they were more capable in that behavior than was required by a COS. If the resulting answer was zero, then the capability matched the importance placed on that behavior. If the number was positive, then the respondent felt that they were not as capable of accomplishing that behavior as they needed to be, thus, they required further training in that skill.

All of the values for each skill were then summed and divided by the number of respondents to arrive at a mean rating for each skill. These means were used to rank the training required variables. Three separate rankings were computed: Chiefs of Supply, supply officers, and total population. The top ten skills were identified from each sub-population, with the exception of the COS sub-population. The COS sub-population again had two answers with the same mean for the tenth positions, so eleven skills are listed.

T-tests were run to compare the COS sub-population to the supply officer sub-population for each of the training required variables. The pooled variance estimate was used when the variances were equal (using a two-tailed probability F value of .05 or less). A separate variance estimate was used for unequal variances. Four skills that required training proved to have significantly different means, implying the populations did not

agree on the amounts of training needed for that skill. The skills are: clarifying work roles, criticism, administration of discipline, career communication. Two of the four skills, clarifying work roles and administration of discipline were both on the top ten lists for the supply officers and the total population, but neither were on the COS top ten list as skills needing further training.

Findings. Figure 15 provides a graphical representation of the top ten skills requiring further training. Table 6 shows each list of skills and their ranking by sub-population. Appendix I displays the results of the top ten responses for all populations by rank and mean. The Chiefs of Supply are summarized in Table 14, the supply officers in Table 15, and the total population in Table 16.

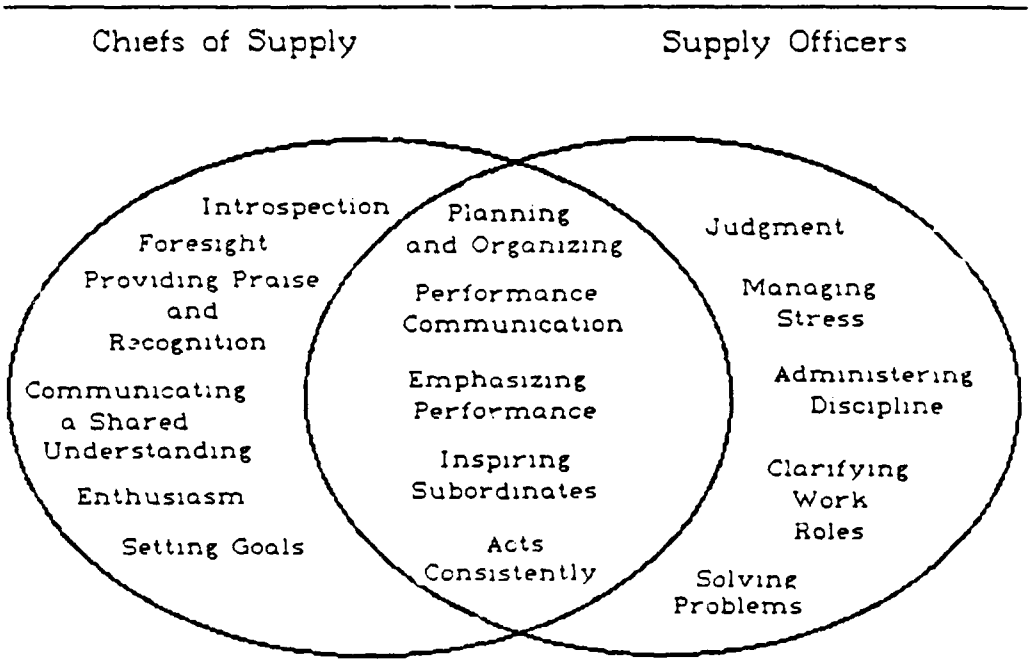


Figure 15. Core Skills Requiring Further Training

Table 6
Rank Order of Top Ten Skills Needing Training by Population

Skill	Total Population	COS	Supply Officer
Acting Consistently	1*	3*	1*
Inspiring Subordinates	2*	1*	3*
Clarifying Work Roles	3		2
Judgment	4*		5*
Emphasizing Performance	5*	6*	6*
Solving Problems	6*		7*
Administering Discipline	7		4
Performance Communication	8	7	8
Managing Stress	9		9
Planning and Organizing	10	10	10
Providing Praise and Recognition		2*	
Communicating a Shared Understanding		4	
Foresight		5	
Enthusiasm		8**	
Introspection		9	
Setting Goals		10	

*Denotes skill previously listed on total population Ten Most Important Skills list
** Denotes skill previously listed only on COS Ten Most Important Skills list

Research Question 3. The third research objective was to identify a means of delivery for the missing core skills. The specific investigative question asks: If supply officers are deficient, what method(s) is most appropriate for improving officers human skills?

To answer this question, the supply officers, excluding Chiefs of Supply, were given seven different training method options. The COS were excluded because the training is aimed at and will be provided only to the supply officers. Each of the six options was paired against every other option. Questions 25 thru 45, Section IV, Part II of the survey were used to measure the responses. The questions were counted for the type of response by using the count statement and then all responses were summed. The frequency statement was also used to compute the mean for each of the seven choices. Each answer was compared to every other answer, making six possible selection points. If the answer was chosen every time possible, then the mean for that method was six.

One-way ANOVA's were run on each of the different training methods to determine if there was a difference in response variance between the different ranks of the respondents. For example, if the perception was that an inexperienced officer might prefer a different mode of delivery than would an experienced officer, a one-way ANOVA comparing method to rank would be tested. There were no significant differences, at the .05 level, in training method preference.

Findings. The responses of the participants are summarized in Table 7. The responses are listed by total number of responses and mean. The top two choices were virtually indistinguishable.

Table 7
Training Method Preferences

Response	Selections per Method	Mean
Professional Development Seminar	1651	4.3
AFIT Short Course	1649	4.3
Classroom Lecture	1448	3.7
Shadowing Senior Officers	1106	2.9
Computer Based Learning	936	2.4
Video Taped Lectures	745	1.9
Correspondence Course	501	1.3

Results Summarized

This chapter discussed the statistical results of the survey data as they related to the research questions. Ten skills were identified as the core skills necessary for Chiefs of Supply, nine of which are common to all three sub-populations. Then, the skills

that required training were identified, with four of those skills found to be common to all populations. Lastly, methods of providing training were ranked and two methods emerged as indistinguishable top choice. Additional analyses were performed and the next chapter will discuss the results of those analyses, make several recommendations, and provide some conclusions.

V. Discussion, Recommendations, and Conclusions

This chapter discusses implications of the results presented in Chapter IV. There is no single piece of literature that identifies the entire set of skills indicated as important by the supply population. The purpose is to combine in one document the skills identified in Chapter IV with the implications for supply officers. This will be accomplished by comparing those skills selected by the supply population with the importance of those same skills or the theories that are embodied by those skills in the business world. Included in this discussion will be the application of these skills to Chiefs of Supply. Several areas will be discussed in order to make these comparisons. The ten skills identified as most important for a Chief of Supply will be discussed first, followed by the capabilities of each sub-population, the top ten skills requiring training, comparison of skills to military literature, and the need for training. Methods for conducting this training are then discussed, along with specific recommendations. The limitations and suggestions for further research will precede the conclusions of this study.

The Ten Most Important Skills for a Chief of Supply

In Chapter IV the top ten skills needed by Chiefs of Supply were identified. These skills are listed by sub-population in Table 8 The top three skills were ranked identically by both sub-

populations. The next six skills were also common to both sub-populations, although they were not identically ranked, bringing the total to nine common skills. Matching nine of the top ten skills implies substantial agreement between the Chiefs of Supply and

Table 8
Top Ten Skills Important to Chiefs of Supply by Sub-Population

Skill	COS	Supply Officer
Acts Consistently	1	1
Truthfulness	2	2
Trust	3	3
Judgment	X	X
Listening	X	X
Solving Problems	X	X
Provides Praise and Recognition	X	X
Inspiring Subordinates	X	X
Emphasizes Performance	X	X
Delegation		X
Enthusiasm	X	
Facilitating Teamwork	X	

supply officers' perceptions of the skills they feel are most important for a Chief of Supply. This reinforces the homogeneity of the two sub-populations. The implications of these important skills for a COS will be discussed and compared to existing literature.

Top Three Skills. Leadership is the aspect of personal management involving ethics as it relates to behavior (Van Fleet and Yukl, 1986:17). Transitioning a person from a civilian into a military officer is the first step of any officer training program. An important ingredient in this training program is ethical behavior and integrity. The top three skills identified by both Chiefs of Supply and supply officers are the very essence of integrity and ethical behavior. These three skills are, in rank order: acts consistently, truthfulness, and trust. The importance placed on integrity and ethical behavior by both sub-populations is evidenced by their identical ranking of the top three skills important to a COS.

The honor code 'We will not lie, steal, or c. , nor tolerate among us anyone who does' (used in some form by each commissioning source) is designed to stress the importance of ethical behavior, in which integrity and responsibility are paramount (Contrails, 1978:180). The importance of integrity is stressed again when the officer candidate takes the oath of office. The American Fighting Man's Code of Conduct is yet another example of the emphasis the military places on integrity within the ranks. Captain Theodore Harris spent 14 months in solitary confinement as a prisoner of war in Korea. He felt so strongly

about his integrity that he said, "If I can't go back with my self-respect, I won't go back at all" (Contrails, 1978:188).

However, a study published in Air University Review entitled "Integrity: What Are the Data Telling Us?" indicated integrity is a problem in today's Air Force (AF). In a survey of officers attending Squadron Officer School, 61 percent said they found it necessary to compromise their integrity in the interest of job requirements, most frequently in reporting and documenting inaccuracies (Gray, 1985:85).

Integrity is the foundation of the AF officer corps. As part of that corps, Chiefs of Supply are responsible for maintaining the integrity within their squadron. As a squadron commander the COS needs to demonstrate integrity internal to the organization. To be effective the COS must set and live by the highest standards of honesty and integrity. Chiefs of Supply interact daily with their subordinates. At each meeting, the COS must be truthful and act consistently, always displaying the highest ethical standards. By setting the standards he/she conveys personal expectations to each and every subordinate about the type of conduct that is expected of them. This instills trust and loyalty, the subordinates will respond to the example set by the COS by behaving ethically and with integrity.

The COS must also maintain integrity external to the squadron. The supply squadron is entrusted with large sums of money and resources. Subordinates must document every transaction affecting the status of the available resources and

funding that occurs. If the Chief of Supply or his/her subordinates falsely report or document transactions, not only are they compromising their integrity, they are committing a criminal offense, prosecutable under the Uniform Code of Military Justice. Instances of false documentation and false reporting have come to light recently in Operation Ill-Wind. Although this breach of integrity was not the result of inappropriate actions in a supply squadron, the implications are the same. As a Chief of Supply integrity is a must.

Next Six Skills. Six more skills were identified by both sub-populations as being important to Chiefs of Supply. While the skills were not given the same rank order by both sub-populations, there was only one significant difference noted in the rankings of the skills. This difference will be discussed in detail later in this chapter.

Although each of the skills are interrelated, they have been combined into narrower sub-groups to facilitate discussion. Judgment and problem solving will be discussed as a part of the decision making process. Listening is possibly the most important part of the communication process and will be discussed individually, before relating it to decision making. Inspiring subordinates, emphasizing performance and providing praise and recognition will be discussed from the view point of the expectancy theory of individual motivation

Judgment and Problem Solving. As was previously discussed, integrity is the foundation of each of the Chief of

Supply's actions. An example of the importance of integrity can be emphasized by the next two skills on the importance list: judgment and problem solving. One of a Chief of Supply's primary roles is to function as the top decision maker in the organization. How the COS makes decisions can be used as a model by squadron personnel, as they learn and develop their own judgment and problem solving abilities. Major Gardner notes that judgment is much more than reacting appropriately to a situation. He defines judgment as,

> The ability to combine hard data, questionable data, and intuitive guesses to arrive at a conclusion that events prove to be correct. Judgment-in-action includes effective problem solving, the design of strategies, the setting of priorities, and intuitive as well as rational judgment. (Gardner, J., 1988:20)

Daft and Steers indicate that most mid-level manager decisions are non-programmed. These are decisions that have ill-defined goals, ambiguous information, and uncertainty (Daft and Steers, 1986:440). For the COS to be able to make a decision, there must first be the capability to formulate what the problem actually is. This includes not only defining the problem, but also its causes (Daft and Steers, 1986:338-339). Judgment is important at this phase of decision making because rarely is the COS provided with all of the information necessary to make a valid decision. In addition, the COS is also given extraneous information. Once the COS has determined the relevance of the available information, he/she then advances to solving the

problem. Here too judgment is required. The COS must use the available information, search for alternative answers, evaluate the alternatives, and then select and implement the solution (Daft and Steers, 1986:438).

The results of the decision making process will be closely scrutinized by subordinates to determine whether their leader's present actions are consistent with his/her past actions. If problems are solved and judgment is applied consistently, the trust felt by subordinates will remain. However, if the COS becomes inconsistent in the decision making process, subordinates will begin to doubt not only the COS's ability but his/her integrity as well. At times leaders and managers are required to make judgment calls to show concern for their subordinates, and to further the organizational objectives. Those leaders which demonstrate an extensive knowledge of managerial principles have a definite advantage over those lacking leadership training (Engelage, 1985:51).

Listening. The next skill important to a Chief of Supply is listening. In 1926, Rankin completed a study that divided communication into four basic categories: listening, reading, writing, and speaking. The result of that study indicated 45 percent of an average adult day was spent listening. Since then, many other studies have been completed on communication and listening. For example, Keefe indicated executives spent 63 percent of their time listening, and Barker, et al. found 53 percent of a person's time is spent listening (Steil, et al.,

1983:3). Listening is much harder than other forms of communication because people think much faster than they can speak. When people in business fail to listen, the results can be costly (Redding and Sanborn, 1964:471).

Many Chiefs of Supply state that they have an open door policy. This indicates to subordinates that when they have a problem or ethical question, they can come to the Chief of Supply and he/she will listen openly. When the COS fails to listen to what the subordinate has to say, the subordinate is likely to withdraw, leaving the problems or questions unanswered. One consequence of having problems and questions remain unanswered, is that subordinates generate poor performance. While failing to listen to a subordinate can result in poor performance, the consequences of failure to listen when supporting external organizations can be much more sever.

Numbers, names and dates are easy to confuse, but even straight forward agreements are subject to misunderstandings. If or when these mistakes begin to compound, the results are increased cost, inefficiency and reduced organizational capability (Redding and Sanborn, 1964:476). Should the COS fail to listen, and listen carefully, before making decisions, the decisions could be faulty. If the decision affects the requirements of another base organization, the results could be disastrous. Squadrons could cease to function altogether, or perhaps, continue to function, but at less than full capability. Errors of this magnitude would be disastrous to mission readiness. Not listening could also cause

inconsistencies when applying judgment. These inconsistencies might then be attributed to faulty judgment or lack of integrity, despite the fact that the true cause is an inability to listen effectively.

Inspiring Subordinates, Emphasizing Performance and Providing Praise and Recognition. Before examining the next three skills, we need to consider how people are motivated to high performance. One theory that discusses internal motivation is expectancy theory. In expectancy theory, motivation is determined by the probability that a particular effort will lead to a particular outcome (expectancy), and the value, attitude, or expected utility that an individual places on the possible outcomes or rewards (valence) (Daft and Steers, 1986:103).

There are two types of expectancies: 1) effort to performance expectancies, and 2) performance to outcome expectancies. The effort-performance expectancy relates to the individual's belief that personal effort will lead to performance. Performance-outcome expectancy refers to the individuals belief that a particular performance will lead to a desired outcome. Under this theory, therefore, the motivation of an individual is the result of that individual's effort-performance expectancy times the performance-outcome expectancy times the valence (Daft and Steers, 1986:103).

Consider the following example. Suppose an individual believes that by working overtime, the backlog in the warehouse will be eliminated. Suppose also that this person believes that by

working overtime to eliminate the backlog, the reward will be a three day pass. If the three day pass is a highly valued reward, then she is highly motivated to work overtime in order to clear the backlog. However, of this individual, no matter how hard she works, believed she was incapable of clearing the backlog (performing), then regardless of the reward offered she would have minimum motivation to work overtime. Conversely, if that individual had the ability to clear the backlog, but the expected outcome (reward) was of little or no value, there would also be little motivation to perform.

Although expectancy theory is aimed at explaining individual or internal motivation, it can also be applied to managerial motivation. Each of the three skills, inspiring subordinates, emphasizing performance, and providing praise and recognition, can be related to aspects of expectancy theory to explain their relationship to performance. However, each skill relates to a different part of the equation. Daft and Steers note that performance is influenced by at least four factors: motivation, abilities and traits, role clarity and acceptance, and opportunity to perform (Daft and Steers, 1986:104).

Inspiring subordinates functions as a subset of effort to performance expectancy. If a subordinate does not believe he/she can put forth enough effort to accomplish the task, no matter what the reward, then there is no motivation to perform. When a subordinate does not feel he/she has the ability or effort to perform, it may be possible for the COS to convince the

subordinate that he/she has the ability to perform through inspiration. This can be done using the determinants of performance presented by Daft and Steers (1986). By assessing the true capability of the subordinate, the COS can determine if inspiration and confidence building will encourage the individual to put forth the effort needed to perform. The second option would be for the COS to utilize role clarification to restate the expectancy in a manner such that the subordinate feels capable of performing the task. Inspiring subordinates is one COS method for raising the dimension of effort to performance.

The second skill, emphasizing performance, indicates a relationship between performance to outcome, and functions in much o. the same manner as inspiring subordinates. Here too, the COS can use role clarification to outline what performance is acceptable. The COS is in the position to clarify the role of the subordinate to improve performance. The COS can also provide the opportunity to perform by providing the subordinate with the guidelines necessary to achieve acceptable performance and to remove the obstacles to performance that are in the subordinate's path. By establishing the performance guidelines, the COS is demonstrating to the subordinates what constitutes acceptable performance.

The final skill, providing praise and recognition, is related to the outcome or valence of the expectancy theory. It is the COS's responsibility to ensure that the outcome is of value. This requires extra effort on the part of the Chief of Supply, because he/she is

somewhat restricted in the rewards available. The COS cannot use money or extensive time off as rewards; however, the COS can use praise and recognition as a reward.

Praise and recognition can also be presented as a method to emphasize performance using reinforcement theory. Luthans, refers to reinforcement as the single most important principle of learning. Luthans quotes Thorndike's classic law of effect, as:

> Of those several responses made to the same situation, in those which are accompanied or closely followed by satisfaction [reinforcement]...will be less likely to recur; those which are accompanied or closely followed by discomfort [punishment]...will be less likely to occur. (Luthans, 1981:248-249)

The COS can use praise and recognition to increase the probability of the same performance being repeated again in the future. Once again, the reward or reinforcement used must be desirable. A tremendous satisfaction comes from recognition when it is earned. however, if inappropriately given, the value of the praise is lessened. Praise itself is more than a reward, it is a confidence builder responsible for lessening the anxiety a subordinate feels as he/she moves towards successful job completion (Fallon, 1981:122).

Providing praise and recognition was the one skill that identified a significant difference between the two sub-populations (see Appendix G, Table 10). It is possible that the supply officers did not truly understand the implications surrounding the importance of praise and recognition. However, despite the fact

that the Chiefs of Supply felt that providing praise and recognition was more important than did the supply officers, they both ranked it as one of the top ten skills needed by a Chief of Supply. This ranking clearly denotes the skill's importance.

According to Van Fleet and Yukl (1986), the way in which a leader influences his/her subordinates is related to managerial motivation. They also noted that effective leaders are more likely to give praise and recognition for outstanding job performance. In addition, leaders showing energy and initiative are more likely to channel their efforts into emphasizing subordinate performance, setting goals, and initiating improvement plans (Van Fleet and Yukl, 1986:33-34). Through encouragement, providing praise and recognition, and providing benefits based on merit, the COS is able to gain the loyalty and support of subordinates. Once loyalty and support are apparent, the COS is capable of inspiring and motivating his/her people.

Final Three Skills. In addition to the previously mentioned nine skills, there were three other skills identified as skills important to a Chief of Supply which were not common to both sub-populations. Delegation was identified only by supply officers as being important to Chiefs of Supply. Teamwork was, identified only by Chiefs of Supply. The COS also listed enthusiasm as an important skill.

Delegation. Supply officers felt that delegation was one of the most important skills needed by a COS. The fact that this skill was not listed as a top ten skill by Chiefs of Supply is no

indication that it should be summarily dismissed as unimportant. McConkey (1974) wrote that many managers are poor delegators simply because they refuse to delegate, or do not know how to delegate because they were never taught (McConkey, 1974:46). Lt Col Engelage, US Army (USA), said:

> With the numerous problems confronting leaders and the military's inclination toward solving problems, there is a tendency to micromanage... Sometimes the nature of the problem simply does not warrant the leader's attention (Engelage, 1985:51).

There is also the possibility that this skill was listed by the supply officers because of micromanagement tactics used by some senior leaders. Chiefs of Supply must train their subordinates in the skill of delegating because there is no guarantee they will get a chance to train them later. Lt General Jones, USA, acknowledges this fact, stating that one should "Train [his/her] subordinates to handle higher responsibility in peacetime so [they] are sure to have the courage (moral and physical), the integrity, and ability to win the war" (Jones, 1988:29).

A Chief of Supply must be trusted, as was noted in the first three skills; however, the trust actually needs to flow in both directions. If a COS is to teach subordinates to solve problems, he/she must delegate decision making to lower levels. Not only is delegation used as a learning tool, but inherent to delegation is trust. The COS must trust subordinates in order to delegate. General Vuono stated, "Senior commanders must have trust and confidence in the judgment of their subordinates, and must be

willing to give the freedom of action they need to be successful" (Krysa, 1987:24). By placing that trust properly, the COS will improve the subordinates ability to solve problems and their confidence in that ability, thus inspiring the subordinate to higher levels of achievement. General George S. Patton spoke about delegation in War as I Knew It, when he said, "Never tell people how to do things. Tell them what to do and they will surprise you with their ingenuity" (Contrails, 1978:186).

Facilitating Teamwork. Facilitating teamwork was identified was an important skill by Chiefs of Supply. In his article, "A Team Focus for Leadership," Gardner indicates that molding small units into teams develops initiative and confidence in junior leaders" (Gardner, G., 1987:78). Teamwork is also important in problem solving. Eckles et al. wrote that teamwork allows people to work better to accomplish specific tasks because they have a sense of belonging. It also provides an arena where one team member can provide assistance to another, thus virtually eliminating weak areas (Eckles et al., 1981:183).

Teamwork is important to Chiefs of Supply because their squadron is one of many that form the entire operational wing. Both Chiefs of Supply and their subordinates must be able to work with others in their own squadron, as well as those in other organizations in order to accomplish the overall mission.

Enthusiasm. "One man has enthusiasm for thirty minutes, another for thirty days. But, it is the man who has it for thirty years, who makes a success of his life" (Harrison,

1989:82). Enthusiasm was the other skill identified by Chiefs of Supply as important, but was not identified by supply officers. Gardner calls enthusiasm vitality. He states that high energy and stamina are a must for leaders (Gardner, W., 1988:20). A positive attitude is at the heart of sustained morale and motivation (Gardner, W., 1987:11).

Effective leaders use enthusiasm to direct the motivation of subordinates toward the pursuit of shared goals. Chiefs of Supply felt that this skill was significantly more important ($p < .05$) than did the supply officers. One possible reason for this discrepancy is that, although supply officers can recognize and respond to enthusiasm, they may not label it as such. It is possible that this skill may have been combined with, or identified as, inspiring subordinates. Despite the omission of enthusiasm from the supply officers' list of skills important to a Chief of Supply, the literature supports the COS's indication that enthusiasm is important for leaders. "A leader is a man who has the ability to get another to do what they don't want to, and like it" (Contrails, 1978:187). The COS needs enthusiasm to accomplish the mission.

The indications are that the twelve skills listed in Table 8, are the most important skills for Chiefs of Supply. Even the three skills not common to both sub-populations were supported by the literature as skills needed by any manager. With the importance of these twelve skills established, it would be possible to end the search for skills requiring training and opt to train all of these

skills. However, the data analysis is not complete. Each respondent was asked to rate their own capability for each of the same 45 skills that they rated for importance. The results of the capability assessment are discussed next.

Present Capability for Skill Accomplishment.

Each respondent was asked to rate their present capability to accomplish each of the skills listed in Figure 13 (Chapter II). Surprisingly, both the pooled variance estimate and the separate variance estimate t-tests identified only four skills where the mean capability of the two sub-populations was statistically different (measured to the .05 level). These four skills with a significant difference are acting consistently, administering discipline, judgment, and commitment to a vision.

Despite the results of the t-tests, it is important to note that although *there is no statistical difference between the capabilities of* the Chiefs of Supply and the supply officer, there is a difference in the response patterns. For the majority of the answers, Chiefs of Supply responded with a capability of six or seven, on the Likert scale measurement, while the majority of the supply officers responded with a five or six.* The responses given by the supply officer were almost always one number lower than the COS, and occasionally they differed by two. This shows that there is,

* These histograms and cross tabulation tables are quite extensive and were not included due to space considerations. They are available from the author upon request.

indeed, a difference in capability between supply officers and Chiefs of Supply.

Skills Requiring Further Training

One objective of this thesis was to determine those skills in which supply officers needed additional training or experience. The top ten responses given by each sub-population are listed in Table 9. To help determine these skills, the individual's skill capability was subtracted from their skill importance. Those computations resulting in positive numbers indicate which skills need training.

As shown in Table 9, sixteen different skills were identified by the two sub-populations as requiring further training. Once again, there are ten are listed for supply officers while eleven skills listed for Chiefs of Supply, due to a tie. The result of skill rankings indicate two sub-populations do not share as many common skills requiring training. However, the two sub-populations did select seven skills that they had previously indicated as important to Chiefs of Supply; these skills are denoted by asterisks. Nine new skills requiring further discussion were also identified. These skills are regrouped to facilitate discussion.

The Chiefs of Supply indicated a need to improve their skill in communicating a shared understanding. It is through communicating a shared understanding that the Chiefs of Supply and their supply officers can improve performance communication. This performance communication will enhance the skills of clarifying work roles and administering discipline, both of which

the supply officers felt they required further training in. Administering discipline can be further explained using the

Table 9
Top Ten Skills Requiring Training by Sub-Population

Skill	COS	Supply Officer
Acting Consistently	X*	X*
Inspiring Subordinates	X*	X*
Clarifying Work Roles		X
Judgment		X*
Emphasizing Performance	X*	X*
Solving Problems		X*
Administering Discipline		X
Performance Communication	X	X
Managing Stress		X
Planning and Organizing	X	X
Providing Praise and Recognition	X*	
Communicating a Shared Understanding	X	
Foresight	X	
Enthusiasm	X**	
Introspection	X	
Setting Goals	X	

*Denotes skill previously listed on total population Ten Most Important Skills list
** Denotes skill previously listed only on COS Ten Most Important Skills list

reinforcement theory. Managing stress will be discussed next. Goal setting and planning serve to also enhance the discussion of foresight. The last skill to be discussed is introspection. Since each of these skills have been related to theories in the civilian world, the section will close with a brief look at the results of one military study.

Communicating a Shared Understanding, Performance Communication, Clarification of Work Roles, and Administering Discipline. Communicating a shared understanding was indicated by the Chiefs of Supply as a skill in which they required training. This is the second time communication has appeared as an important skill. Commitment to a shared understanding can only be accomplished by ensuring that all people involved share the same ideas of what needs to be accomplished. Each individual in the group or organization must start with the same frame of reference. Suppose an individual is told to conduct "meaningful" training. This individual's idea of meaningful training may not agree with the commander who directed the training The perspectives of the commander and the subordinates are usually entirely different (Askew, 1989:42). In every communication process, the COS and his/her subordinates need to share the same frame of reference for successful accomplishment of the job or task. If a COS does not ensure that the subordinates truly understand what is expected of them, problems are likely. This shared understanding is essential to performance communication. Note that in Table 9, performance communication is a skill that

requires training for both the COS and supply officer. This skill was previously identified as a skill important to a COS under the label emphasizing performance. It is through performance communication and emphasizing performance that the COS identifies to the subordinate what performance is acceptable.

One way to ensure that performance is communicated through a shared understanding is through determinants of performance, by clarifying the work role and ensuring that the clarification is understood and accepted (Daft and Steers, 1986:104-105). Once an understanding is shared of the performance expectation, reinforcement theory can be used in administration of discipline. Administrative discipline is another of the skills in which the supply officers indicated they needed training. Reinforcing the desirability of outcomes will increase the strength of a response and increase its probability of being repeated in the future. Conversely, if the expected performance is not clarified, understood, or even disregarded, and the outcome is not a desired response, then punishing the undesirable outcome will weaken the strength of the response and decrease the possibility of recurrence (Luthans, 1986:248-249). However, Major General Schofield, in 1879 cautioned those administering discipline, saying:

> The discipline which makes a soldier reliable in battle is not to be gained by harsh or tyrannical treatment. On the contrary, such treatment if far more likely to destroy than to make an Army...He who feels, and hence manifests disrespect toward others, especially subordinates, cannot fail to inspire hatred against himself. (Contrails, 1978 188-189)

The type of discipline being cautioned against is the use of coercion or fear to inflict punishment or threats of punishment. An analysis of power indicated that those persons using coercive power were actually harming the organization, rather than increasing its effectiveness (Luthans, 1986:391).

Managing Stress. The next skill, managing stress, is extremely important to any manager. Stress is unavoidable. According to Newsweek, stress seems to be reaching unmanageable proportions. A survey by an advertising agency found that three-fourths of Americans reported that their jobs cause them stress. Unfortunately, it is not just that there is an increase in the frequency of on the job stress, but an also an increase in the duration of the stress. The increased durations are not allowing the managers time to recuperate before the next crisis hits. In order to survive the stress, managers must be taught how to deal with it (Miller, 1988:40). By its nature, the military is a stressful profession, and will become even more so in the event of a war. To function at their best, not only must Chiefs of Supply learn how to deal with stress personally, but they must also teach their subordinates to do the same.

Foresight. Foresight, or developing a vision, was listed as one of the seven keys to business leadership by chief executive officers, management consultants, and business school professors (Labich, 1988:58). The skill of creating verbal and mental pictures for subordinates can begin with providing a clear and definite picture of as much of the future as is known

(Byrd, 1987:38). Foresight includes the skills of planning and goal setting. Without these skills a COS cannot provide to the subordinates a clear picture of where the squadron is headed.

Introspection. The last skill to be discussed, although by no means the least important, is the skill of introspection. "For a leader, self understanding is critical. Without it, leaders do more harm than good" (Byrd, 1987:41). Byrd's review of the literature on introspection reveals three important findings. First, in Bennis' study of 90 corporate leaders, each leader was able to recognize his own strengths and compensate for his weaknesses. Next, Garfield's peak performers could assess their own personal strengths, and finally Tichy's study of transformational leaders proved they have an insatiable appetite for self-understanding, self learning, and self-development (Byrd, 1987:41).

Whetten and Cameron (1984) described introspection in terms of developing self-awareness, and listed it as the number one skill critical for managers. The need for this skill by Chiefs of Supply should be apparent. In order to be an effective leader, the COS must first have a good understanding of his/her strengths and weakness. Armed with that knowledge, the COS is then capable of utilizing subordinates to compensate for personal weakenesses.

Comparison of Skills to Military Literature

In 1986, Van Fleet and Yukl completed their study on military leadership and published the results in their book, Military Leadership: An Organizational Perspective. This book is useful as a

comparison of skills needed by Chiefs of Supply because it deals specifically with military leaders. In their study, Van Fleet and Yukl examined the behaviors of military personnel, focusing on skills needed in combat/wartime and non- combat/peacetime. This study was done using three different methods: critical incidents of military cadets during drill and ceremonial situations, correlational analyses of questionnaires administered to cadet leaders at Texas A & M, and a ROTC summer camp; and career description analyses of biographies and autobiographies of effective leaders (Van Fleet and Yukl, 1986:46-52, 66). The results of the analyses are shown in Figure 16.

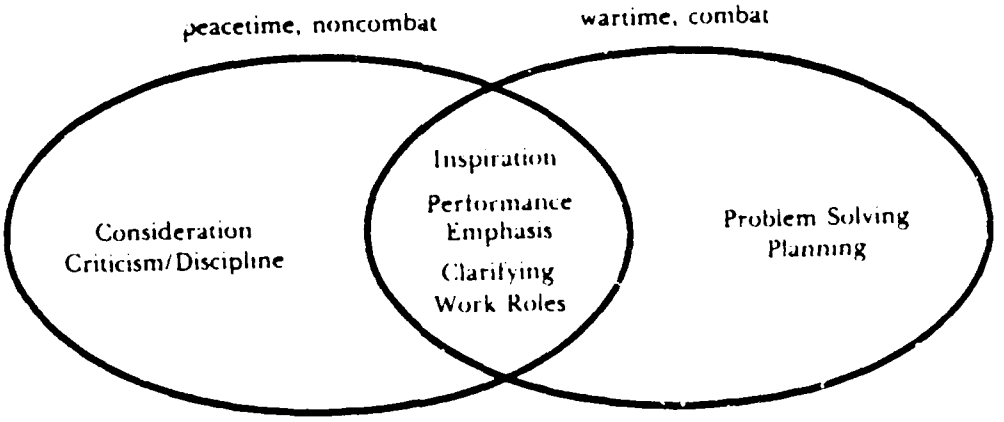


Figure 16. Significant Behavior Categories for Methods (Van Fleet and Yukl, 1986:91)

When comparing Van Fleet and Yukl's 7 behaviors to the 16 skills identified as requiring training, six of Van Fleet and Yukl's categories coincide with skills from Table 9. The only skill identified by Van Fleet and Yukl and not listed by the Chiefs of Supply or Supply officers was consideration. Consideration was identified in this study as personal communication.

Because the respondents for this study were not asked to differentiate between the skills needed in combat versus noncombat, unlike the subjects in Van Fleet and Yukl's study, there may be several reasons for differences between the studies. It is possible that some people answered based on what skills they would need today, while others based their answers on the skills they would need during a wartime scenario. Second, Van Fleet and Yukl used a wide variety of military personnel for their study, while this study was aimed at one specific group. Finally, the unit size and organizational level could be expected to influence different leader behaviors due to their size (Van Fleet and Yukl, 1986:27).

Table 9 is useful for determining what skills actually require training. It provides an indication of skills in which both sub-populations feel they require more training. Even those skills listed that are not common to both sub-populations are supported by the literature as being skills important for managers and leaders. In fact, seven of the sixteen skills requiring training coincide with the skills identified by this study as being important to Chiefs of Supply. Also, six of the sixteen skills coincided with Van Fleet and

Yukl's study. One additional area needs to be discussed before the list of skills to be trained is finalized. This area involves the reliability of a person's ability to assess their own capability. The theory of attribution will be used to make inferences about the actual capability of the respondents.

Need for Training

Attribution is a special feature of social interaction where each person is their own cause and effect. "[One's] own behavior may be the cause of the behavior [one] is trying to understand and explain" (Kelly, 1971:1). One aspect of attribution is the discounting affect. The discounting principle states that, "the role of a given cause in producing a given effect is discounted if other plausible causes are also present" (Kelly, 1971:8). The theory indicates that if there is only one plausible (socially desirable) cause for attribution, then compliance with that skill or behavior would be associated with internal causes (personality traits). However, if both internal and external causes are plausible, then the role of internal causes is discounted and the behavior is attributed to external pressures (Kelly, 1971:9). For example, a person is likely to overstate their capability to delegate. If they do delegate successfully, it is socially desirable for the cause to be because of their own capability. However, should delegation fail, that same person is likely to attribute more of the cause of failure to the environment rather than himself/herself

Because of this tendency to overstate personal capability, it is possible that some of the skills that are important to a Chief of Supply, although not reported as needing training, may indeed require further training. Secondly, just because a skill listed as requiring further training did not make the top ten list of important skills for a Chief of Supply does not mean the skill does not require training. Finally, although the respondents of the survey were a representative sample of the population, the reasons for non-response are not known. Because of this unknown, caution should be used when defining the skills to be trained. Should the list become restrictively narrow, the training may not help those persons that require it the most. Therefore, the set of skills selected as requiring further training includes not only all of the top ten skills identified as being important to Chiefs of Supply, but also top ten skills, for both sub-populations, that require further training. Figure 17 contains the list of those skills.

The intent of this study was to determine the human skills needed by supply officers to become successful Chiefs of Supply. Each of the 16 skills to be trained have been validated through data analysis and through comparison to existing literature. From this review and the review of literature conducted in Chapter II, there is an indication that the specific skills needed by managers are slightly different for each leader. These differences can possibly be attributed to differences in working environments and demands placed on business leaders versus those placed on supply officers and Chiefs of Supply. This finalizes the list of skills to be

trained. It is now time to discuss what types of training the supply officers prefer.

Acts Consistently	Truthfulness
Trust	Judgment
Listening	Solving Problems
Provides Praise and Recognition	Inspiring Subordinates
Emphasizes Performance	Delegation
Enthusiasm	Facilitating Teamwork
Clarifying Work Roles	Judgment
Administering Discipline	Performance Communication
Managing Stress	Planning and Organizing
Foresight	Setting Goals
Introspection	
Communicating a Shared Understanding	

Figure 17. Complete List of Skills to be Trained

Method of Training

The results of the data analyses clearly indicate a preference for a training situation that has an instructor and allows for interaction between that instructor and the other students. The preferred methods of training were professional development seminars and Air Force Institute of Technology (AFIT) instruction. Classroom lecture followed as a third choice. Katz supported classroom training as the method for learning, stating human skills are learned by doing. "Skills are developed through practice and through relating learning to one's own personal experience and background" (Katz, 1955:40). Katz also stated in the same

paragraph, "Training...requires a skilled instructor and organized sequence of activities " (Katz, 1955:40).

The fourth and fifth choices for methods of training were computer based learning and shadowing senior officers. These methods had a selection preference of slightly less than 50 percent. With either of these two options some student interaction is possible.

The supply officers also had definite ideas about what methods of training they did not want to receive. The two methods, correspondence courses and videotaped lectures, that had neither instructors nor allowed student interaction were each selected less than two times out of six possible pairings. This finding appears to be consistent with Katz's conclusions quoted above. Having identified a list of skills to be trained and obtaining training preferences, let us now consider appropriate recommendations.

Recommendations

General Comments. "Effective training stems from a learning atmosphere systematically designed to produce changes in the work environment" (Goldstein, 1986:3). The type of training needs to be identified first in order to effectively train supply officers to assume the role of Chief of Supply. This training must meet the needs of the officers as they progress in rank and responsibility. Relying purely on technical training courses is not enough. Increased responsibility requires the leader to use different skills

The Xerox Corporation begins their training with new management candidates and continues it all the way through senior executive level. At the lower levels, management skill and skill acquisition are taught. Business strategies and tactics are taught at the higher levels (Short, 1987:26).

Training courses require senior management involvement, not only through supporting the program, but by actually getting involved in the process. "Senior management should serve as a role model for subordinates by involving themselves directly in conducting and attending educational efforts for their employees" (Greiner, 1987:38).

The training process for management skills cannot be accomplished quickly through only one session or one course. Training should begin when the officer enters the supply career field and continue until retirement. Training must be a continual process. General Electric has recognized the importance of training, by building a Management Development Institute. At the institute, professional managers are required to participate in training that is provided during transitional points in their careers. The training sequence begins with hiring and progresses as the manager moves upward in the organization, culminating in a course for corporate officers (Tichy, 1987:40). The courses that are taught are built specifically to address the needs of the organization. Federated Department Stores, Motorola, General Foods, and Xerox Corporation are also examples of organizations that have built management and training programs that are

directly linked to the implementation of corporate strategies (Bolt, 1987:28).

Chiefs of Supply are the experts in their field, and their knowledge should be made available to others. Commitment to the training program should begin at the top. Top leadership should also be actively involved in the actual training (Short, 1987:26).

Specific Proposals. The results of the training delivery method analysis indicate that the first training choice of supply officers was the professional development seminar, although the AFIT short course was a very close second. There are several options for delivery location: base level, regional seminar, or a combination of both. Using a combination of the two has distinct advantages. By teaching the course at base level, the instruction would be available to every officer in the unit at the same time. Common problems could be addressed and specific, relevant examples could be given. This base level instruction could be supplemented occasionally through the use of regional supply officer seminars. These regional seminars would afford the officers an opportunity to meet fellow supply officers, get a broader view of the various jobs within the supply community, and provide a forum for discussions about new ideas and chronic problem areas. This method of training would also provide an excellent opportunity for distribution of important supply information whether it be squadron, base, command, or Air Force wide. This regional conference could be organized either by geographical area or by major air commands

Standardized courses Air Force wide should be considered as a way to ensure each supply officer is provided with the same training. This standardization could be accomplished utilizing either the Logistics Management Center (LMC) Training Directorate, or Air Training Command to design the lesson plans. By designing a standardized course, the training would be the same throughout the Air Force, yet could still allow for some customizing at each base.

An additional benefit to standardization is that training could continue despite a permanent change of station (PCS). Since supply officers could PCS throughout the entire year, a predetermined standardized schedule of training should be considered to minimize loss of training as individuals relocate to new assignments.

Although the boss may not be a skillful trainer, he/she could be the most effective trainer in the organization. "Without his true involvement much of the training effort is really a waste of time" (Golde, 1987:33). The Chiefs of Supply are ideal candidates to teach these courses. In addition to sharing personal knowledge and experience, the COS could continue to improve his/her leadership skills and reinforce their knowledge base. These new courses could also be used to supplement the on-the-job training currently conducted by the Chiefs of Supply.

Areas of Concern. Serious consideration should be given to the grading criteria of these training courses. The method of rating often determines the students' enthusiasm and effort. If possible,

the course needs to remain informal in order to allow the supply officers to express themselves as freely as possible. While some form of measurement is needed to determine course effectiveness, the measurement tool should not be so threatening as to inhibit learning.

Another area to consider when designing the course is the bi-polar nature of the supply career field. Almost half of the supply officers have ten or more years of prior enlisted experience and the the other half have no prior service. This bi-polarity creates vast differences in technical expertise and experience in the supply system. These new courses will need to address both the novice and the expert views without causing confusion or boredom. The bi-polarity also causes the supply officers to have different amounts and different types of managerial skills, resulting in two distinct training levels. This training program must address the different perspectives and meet the needs of both types of people

Limitations of Research

No attempts have been made to generalize these results throughout the Air Force. The population of interest for this study was supply officers. This questionnaire could be administered to other populations with minor modifications.

The entire population of supply officers, from First Lieutenant through Major with less than three time in grade, and all Chiefs of Supply were sampled. Although a representative sample of the population was received, almost half of the officers did not

respond. It is possible that those not responding to the survey may have significantly different perceptions about the importance skill and their capabilities than did those who responded to this survey.

When asked about the importance of a behavior for a Chief of Supply, the respondents were not asked to distinguish between behaviors needed in peacetime versus those needed during war. Should this question be asked, the results of this study could differ significantly.

Areas for Future Research

There are several possibilities for follow on studies:

1) Analyze each skill that appears on the list of skills to be trained and determine what method(s) of training will best facilitate learning the skill. Select some skills that are trainable by using computer based learning. Once these skills are identified, build a prototype lesson for one skill or a sample portion of a lesson that combines several skills.

2) Once training has been instituted, repeat this survey to see if the importance and capabilities of either the Chiefs of Supply or supply officers have changed.

3) Readminister this survey, differentiating between the skills needed by a Chief of Supply during combat versus those needed in a non-combat situation.

Conclusions

Studying competencies at the individual job level is excellent for determining specific job training needs (Van Fleet and Yukl, 1986:90). This research has determined those skills that the supply officer felt were important for a Chief of Supply and have assessed the skills that require training. Four general conclusions were made about the types of skills the supply population felt were important and those skills that the training should emphasize.

1) Chiefs of Supply have high degree of integrity and ethical standards in the performance of their jobs. To maintain those high standards, a Chief of Supply needs to continually reassess his/her own capabilities, identifying both strengths and weaknesses. There should be a continual desire for self-improvement. By understanding him/herself, the COS becomes aware of the impact his/her actions have on others.

2) The Chief of Supply's ability to communicate is essential. As the commander, the majority of his/her day is spent communicating. The COS should to ensure that he/she has all the necessary communication tools available. Those communication tools will also assist in delegation and decision making.

3) The way subordinates preform their job is very important to the COS. The COS is responsible for making personal expectations clear to subordinates by clarifying work roles, encouraging and inspiring performance, providing praise and recognition, and facilitating team work

4) The COS should continually be looking for new opportunities and activities that can be undertaken to strengthen and motivate his/her squadron.

Appendix A: 1988 Supply Officer Survey Instrument for Chiefs of Supply

DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY
AIR FORCE INSTITUTE OF TECHNOLOGY
WRIGHT-PATTERSON AIR FORCE BASE OH 45433-6583

23 May 1989

Dear Chief of Supply

The Air Force Supply Executive Board is composed of all Major Air Command Directors of Supply. They are the policy makers for the supply community. In March 1988, the Directors expressed concern with the professional development of junior supply officers. This concern stems from the number of officers arriving at the point of being a Chief of Supply that are missing some unnamed management or leadership skills. The Air Force Institute of Technology (AFIT) School of Systems and Logistics in conjunction with the Air Force Logistics Management Center (AFLMC) were tasked to study the characteristics needed to be an effective Chief of Supply.

While the senior supply leadership is concerned about the professional development of junior officers, you too should be concerned. The day will come when you will be the senior supply leadership and these junior supply officers will work for you as Chiefs of Supply.

We are asking for your help. Since you are currently a Chief of Supply you know better than anyone else what management and leadership skills you need on a day to day basis. We are truly interested in your opinion. Your honest answers are vital to determine what management and leadership skills are critical, and will have a significant impact on the professional development of future junior supply officers.

Your participation in this research project is entirely voluntary; but your help would certainly be appreciated. All of your responses will be treated confidentially. Individual identification is not required. No individual or organization will be identified in use of this material unless you give specific written permission. If you wish to receive summary statistics from this study, you may include your name and address on the back page of the survey and the information will be provided upon completion of the study.

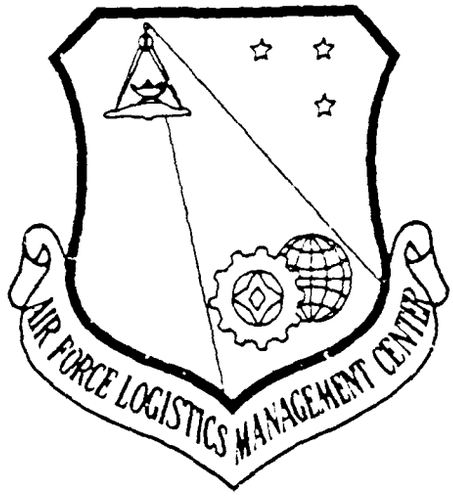
If you have any questions concerning this questionnaire please contact Captain Dana L. Strong, AFIT/LSG, AUTOVON 785-6435 or FAX AUTOVON 785-2791.

DANA L. STRONG, Captain, USAF
Supply Officer and AFIT Student

3 Atchs
1. Questionnaire
2. Return Envelope
3. Answer Sheets

AFLMC SCN 881178 Expires 31 January 1990

STRENGTH THROUGH KNOWLEDGE



SURVEY OF SUPPLY OFFICERS

AFLMC SCN 881176
Expires 31 January 1990

AIR FORCE LOGISTICS MANAGEMENT CENTER

GUNTER AFB, AL 36114-6693

SECTION I

This section contains items relating to your personal background. Please mark all of your responses on the questionnaire and then blacken the corresponding number, with a No. 2 pencil, on the answer sheet provided.

1. Your age is:

    1. 21-25
    2. 26-30
    3. 31-35
    4. 36-40
    5. 41-45
    6. 46-50
    7. 51-55

2. Your sex is:

    1. Male
    2. Female

3. Your rank is:

    1. 1st Lieutenant
    2. Captain
    3. Major
    4. Lieutenant Colonel
    5. Colonel

4. Your commissioning source was:

    1. OTS
    2. ROTC
    3. Service Academy
    4. Other

5. How would you classify your undergraduate degree?

    1. Liberal Arts (English, History, Music, etc.)
    2. Social Sciences (Psychology, Sociology, etc.)
    3. Business (Management, Accounting, etc.)
    4. Engineering (Civil, Electrical, Aeronautical, etc.)
    5. Sciences (Physics, Chemistry, Biology, etc.)
    6. Other

6. Your highest education level is:

1. Bachelor's Degree
2. Some graduate work
3. Master's Degree
4. Some work beyond Master's Degree
5 Doctoral Degree
6. Post Doctoral Degree

7. How much commissioned time (TAFCS) have you served in the military?

1. Less than four years
2. Four years, but less than six years
3 Six years, but less than eight years
4. Eight years, but less than ten years
5. Ten years, but less than twelve years
6. Twelve years, but less than fourteen years
7. Fourteen years, but less than sixteen years
8. Sixteen years, but less than eighteen years
9. Eighteen years, but less than twenty years
10. Twenty years or more

8. Your amount of prior enlisted service time is:

1. None
2. Less than one year
3. One year, but less than two years
4. Two years, but less than four years
5. Four years, but less than eight years
6. Eight years or more

9. Your current assignment corresponds to which category?

1. Primary AFSC
2. Career Broadening, Non-Rated Supplement
3. Career Broadening, Rated Supplement
4. Other (please specify) _____

10. What type of organization do you presently work in?

1. Joint
2. Major Air Command
3. HQ Numbered AF
4. Air Logistics Center
5. Base Level
6. HQ AFLC
7. Other

11. Which major command do you work for?

1. Air Force Logistics Command
2. Air Force Systems Command
3. Air Training Command
4. Military Airlift Command
5. Pacific Air Command
6. Space Command
7. Strategic Air Command
8. Tactical Air Command
9. United States Air Forces Europe
10. Other (please specify) _____

12. If you are at base level, are you presently assigned to a Supply Squadron?

1. Yes
2. No

If you answered NO to question 12 please *skip* question 13 and continue with question 14; otherwise continue with question 13.

13. Your current job title is:

1. Section Chief
2. Branch Chief
3. Assistant Chief of Supply
4. Chief of Supply
5. Other (please specify) _____

14. How long have you been assigned to your current job?

1. Less than 6 months
2. At least 6 months, less than 12 months
3. At least 12 months, less than 18 months
4. At least 18 months, less than 24 months
5. At least 24 months, less than 30 months
6. At least 30 months, less than 36 months
7. At least 36 months, less than 42 months
8. At least 42 months, less than 48 months
9. 48 months or more

SECTION II

This section of the questionnaire contains a list of human behaviors exhibited by managers while they perform their daily duties. Use the scale below to **RATE HOW IMPORTANT YOU FEEL THE BEHAVIOR IS FOR A CHIEF OF SUPPLY**. Enter the number on the questionnaire and then blacken the corresponding number on the answer sheet provided.

1	2	3	4	5	6	7
Unimportant	Very Rarely Important	Rarely Important	Sometimes Important	Often Important	Very Often Important	Extremely Important

15. EMPHASIZES PERFORMANCE: The extent to which a Chief of Supply emphasizes the importance of subordinates performance and encourages subordinates to make a maximum effort. _____

16. INSPIRING SUBORDINATES: The extent to which a Chief of Supply stimulates enthusiasm among subordinates for the work of the group, and says things to build their confidence in the group's ability to successfully attain its objectives. _____

17. PROVIDES PRAISE AND RECOGNITION: The extent to which a Chief of Supply provides appropriate praise and recognition to subordinates with effective performance, and shows appreciation for special efforts and contributions made by subordinates. _____

18. STRUCTURES REWARD CONTINGENCIES: The extent to which a Chief of Supply rewards effective subordinate performance with tangible benefits, such as recognition awards, promotions, better assignments, better work schedules, extra time off, etc. _____

19. CLARIFIES WORK ROLES: The extent to which a Chief of Supply informs subordinates about their duties and responsibilities, clarifies rules and policies, and lets subordinates know what is expected of them. _____

20. SET GOALS: The extent to which a Chief of Supply, either alone or jointly with a subordinate, sets specific, challenging, but realistic, performance goals for each important aspect of the subordinate's job. _____

21. DELEGATES. The extent to which a Chief of Supply delegates responsibility and authority to subordinates and allow them discretion in determining how to do their work. _____

22. PLANS AND ORGANIZES: The extent to which a Chief of Supply plans in advance how to improve efficiency and productivity, schedule work, coordinate work unit activities, accomplish task objectives and strategies, and cope with potential problems. _____

23. FORESIGHT: The extent to which a Chief of Supply looks for new opportunities for the work unit to exploit, proposes new activities to undertake, and offers innovative ideas for strengthening the work unit. _____

Use the scale below to RATE HOW IMPORTANT YOU FEEL THE BEHAVIOR IS FOR A CHIEF OF SUPPLY.

1	2	3	4	5	6	7
Unimportant	Very Rarely Important	Rarely Important	Sometimes Important	Often Important	Very Often Important	Extremely Important

24. SOLVING PROBLEMS: The extent to which a Chief of Supply takes prompt and decisive action to deal with serious work-related problems and disturbances. _____

25. FACILITATES TEAMWORK: The extent to which a Chief of Supply emphasizes teamwork and tries to promote cooperation, cohesiveness, and identification with the group. _____

26. MANAGES CONFLICT: The extent to which a Chief of Supply discourages unnecessary fighting and bickering among subordinates, and helps them to settle conflicts and disagreements in a constructive manner. _____

27. CRITICIZES: The extent to which a Chief of Supply criticizes specific acts of subordinates which are unacceptable to the organization, finds positive things to say, and provides opportunities for subordinates' explanations. _____

28 ADMINISTERS DISCIPLINE The extent to which a Chief of Supply takes appropriate disciplinary action to deal with a subordinate who violates a rule, disobeys an order, or has consistently poor performance. _____

29 TASK COMMUNICATION The extent to which a Chief of Supply lets subordinates know what needs to be done, explains changes in the work place, and explains policies and procedures. _____

30. PERFORMANCE COMMUNICATION: The extent to which a Chief of Supply communicates information about the quality of subordinate's work or how well (s)he is doing _____

31. CAREER COMMUNICATION: The extent to which a Chief of Supply discusses training opportunities with subordinates and provides them with career information on future assignments. _____

32. PERSONAL COMMUNICATION: The extent to which a Chief of Supply and subordinates discuss personal issues such as family and non-related work interests. _____

33 WRITTEN COMMUNICATION The extent to which a Chief of Supply communicates with superiors, peers, and subordinates through the use of memo's, letter's, and other written correspondence. _____

34 LISTENS. The extent to which a Chief of Supply listens to subordinates and responds to the issues raised. _____

35 ACTS CONSISTENTLY The extent to which subordinates feel a Chief of Supply is consistent in his/her responses, actions, and policies _____

Use the scale below to RATE HOW IMPORTANT YOU FEEL THE BEHAVIOR IS FOR A CHIEF OF SUPPLY.

1	2	3	4	5	6	7
Unimportant	Very Rarely Important	Rarely Important	Sometimes Important	Often Important	Very Often Important	Extremely Important

36. FLEXIBILITY: The extent to which a Chief of Supply adapts to new or unexpected situations in the work unit and allows modifications to existing plans while still maintaining control of the unit. _____

37. PATIENCE: The extent to which a Chief of Supply is willing to help subordinates over and over without complaint. _____

38. QUESTIONS POLICIES AND PROCEEDURES: The extent to which a Chief of Supply is willing to question decisions that are contrary to current policies or moral standards, or view with skepticism solutions that require large expenditures of manpower or materials. _____

39. COMMUNICATING A VISION: The extent to which a Chief of Supply is able to create mental and verbal pictures of a desirable future function or state in the minds of subordinates. _____

40. NETWORKING: The extent to which a Chief of Supply socializes with top management, is involved in community events, develops cooperative relationships with other people who are sources of support and information, and maintains relationships through periodic interaction. _____

41 MONITORS OPERATIONS: The extent to which a Chief of Supply keeps informed about the activities within the unit and checks on the performance of subordinates. _____

42. MONITORS THE ENVIRONMENT: The extent to which a Chief of Supply keeps informed about outside events that have important implications for the work unit. _____

43. CONTROL: The extent to which a Chief of Supply implements controlling methods such as preventative maintenance, reviewing major problems and project delays, inspecting work, and conducting follow-up inspections. _____

44 COMMITTMENT TO A VISION: The extent to which a Chief of Supply involves subordinates in shaping the future state of the organization and refuses to give up that view of the future in the face of great adversity. _____

45 TRUST The extent to which subordinates feel they can discuss problems and difficulties with a Chief of Supply without jeopardizing their position or having it "held against" them later. _____

46. TRUTHFULNESS: The extent to which a Chief of Supply is honest in evaluating his/her responses to suggestions or proposals made by subordinates. _____

47 ENTHUSIASM. The extent to which a Chief of Supply demonstrates interest or excitement about his job _____

Use the scale below to RATE HOW IMPORTANT YOU FEEL THE BEHAVIOR IS FOR A CHIEF OF SUPPLY.

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48 DECISION MAKING: The extent to which a Chief of Supply diagnoses the situation, searches for solutions, evaluates the consequences, and selects an alternative. _____

49 ALLOCATES RESOURCES: The extent to which a Chief of Supply chooses among competing resource demands by time management, designing work systems for subordinates, and authorizing implementation of major decisions. _____

50 ENTREPRENEUR. The extent to which a Chief of Supply identifies and takes advantage of new opportunities, and controls the implementation of subsequent changes. _____

51 PEER TEAM BUILDING: The extent to which a Chief of Supply develops implicit contacts with peers to serve mutual needs and trade resources in real-time. _____

52 INTROSPECTION: The extent to which a Chief of Supply understands his job, is sensitive to his impact on the organization, and is aware of his own strengths and weaknesses. _____

53 CONDUCTS EFFECTIVE GROUP MEETINGS: The extent to which a Chief of Supply adequately prepares for, makes presentations, and conducts discussions with peers or subordinates. _____

54 MANAGING STRESS: The extent to which a Chief of Supply identifies sources of major stress, develops effective time management techniques, and develops effective coping mechanisms. _____

55 COMMUNICATING A SHARED UNDERSTANDING: The extent to which a Chief of Supply ensures each member of the work unit shares the same concept of project taskings, goals, and performance expectations. _____

56 NEGOTIATION: The extent to which a Chief of Supply resolves conflict with people outside the unit through commitment of resources, and compromise on behalf of the organization. _____

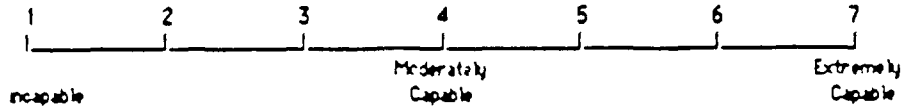
57 LIASON: The extent to which a Chief of Supply interacts with peers and people outside the organization to gain favors and information. _____

58 JUDGEMENT: The extent to which a Chief of Supply's actions are an appropriate response to the situation at hand. _____

59 INTERACTING WITH SUPERIORS: The extent to which a Chief of Supply communicates relevent information to superiors about decisions, plans, unit activities, and requested material _____

SECTION III

Now, using the scale below RATE HOW CAPABLE YOU FEEL YOU ARE TODAY IN PERFORMING THE GIVEN BEHAVIOR. Enter the number on the questionnaire and then blacken the corresponding number on the answer sheet provided.



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66 DELEGATES The extent to which you can delegate responsibility and authority to subordinates and allow them discretion in determining how to do their work _____

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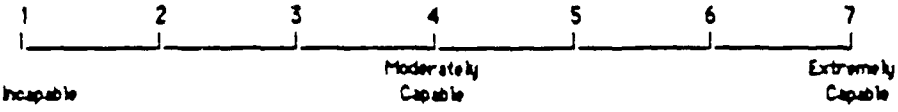

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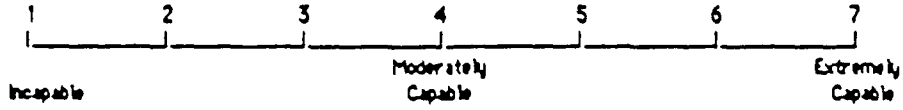
****
****

Please take your responses from the booklet and fill in the FIRST answer sheet now. Your first answer sheet should be completely filled. If it is not completely filled in, go back and check the sequencing of your answers. You may have skipped an item. Use the SECOND answer sheet to respond to the remaining items in the questionnaire.

****
****

Use the scale below RATE HOW CAPABLE YOU FEEL YOU ARE TODAY IN PERFORMING THE GIVEN BEHAVIOR.



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7. MONITORS THE ENVIRONMENT: The extent to which you keep informed about outside events that have important implications for the work unit. _____

8. CONTROL: The extent to which you implement control methods such as preventative maintenance, reviewing major problems and project delays, inspecting work, and conducting follow-up inspections. _____

9. COMMITTMENT TO A VISION: The extent to which you can involve subordinates in shaping the future state of the organization and refuse to give up that view of the future in the face of great adversity. _____

10. TRUST: The extent to which subordinates feel they can discuss problems and difficulties with you without jeopardizing their position or having it "held against" them later. _____

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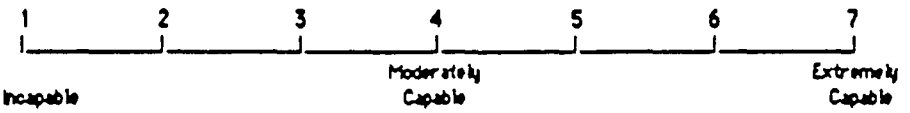

11. TRUTHFULNESS: The extent to which you are honest in evaluating your responses to the suggestions or proposals made by subordinates. _____

12. ENTHUSIASM: The extent to which you can demonstrate interest or excitement about your job. _____

13. DECISION MAKING. The extent to which you can diagnose the situation, search for solutions, evaluate the consequences, and select an alternative. _____

14. ALLOCATES RESOURCES: The extent to which you can choose among competing resource demands by time management, design work systems of subordinates, and authorize implementation for major decisions. _____

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24 INTERACTING WITH SUPERIORS The extent to which you can communicate relevant information to superiors about decisions, plans, unit activities, and requested material _____

****
****

Please take your responses from the booklet and fill in the **SECOND** answer sheet now. You should fill in number **1** through number **24**. If you have more or less than 24 answers, go back and check the sequencing of your answers.

When you have completed the comments section place **both answer sheets and the questionnaire booklet** in the pre-addressed envelope. Please mail the responses as soon as possible.

****
****

Thank you for spending the time to complete this survey. I appreciate your efforts.

If you are interested in receiving a summary of the results of this research please include your name and address below.

Please provide any other comments you wish to add below.

Appendix B: 1988 Supply Officer Survey Instrument for Supply Officers

DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY
AIR FORCE INSTITUTE OF TECHNOLOGY
WRIGHT-PATTERSON AIR FORCE BASE OH 45433-6583

22 May 1989

Dear Supply Officer

The Air Force Supply Executive Board is composed of all Major Air Command Directors of Supply. They are the policy makers for the supply community. In March 1988, the Directors expressed concern about the professional development of junior supply officers. This concern stems from the number of officers arriving at the point of being a Chief of Supply that are missing some unnamed management or leadership skills. The Air Force Institute of Technology (AFIT) School of Systems and Logistics in conjunction with the Air Force Logistics Management Center (AFLMC) were tasked to study the characteristics needed to be an effective Chief of Supply.

While senior leadership in the supply community is concerned about our professional development, you and I need to be very concerned. We are the junior officers they are referring to and if we do not get the training we need, we will not be ready to assume the future leadership role of Chief of Supply.

Senior supply officers want to know our honest opinion of what management and leadership skills we think are important for Chiefs of Supply. They also want to know how well we can perform these skills. Finally, they are interested in determining by what method we would like to receive additional professional development. If we do not provide them with our honest opinion, we have no one to blame but ourselves.

Your participation in this research project is entirely voluntary; but your help would certainly be appreciated. All of your responses will be treated confidentially. Individual identification is not required. No individual or organization will be identified in use of this material unless you give specific written permission. If you wish to receive summary statistics from this study, you may include your name and address on the back page of the survey and the information will be provided upon completion of the study.

If you have any questions concerning this questionnaire please contact Captain Dana L. Strong, AFIT/LSG, AUTOVON 785-5435 or FAX AUTOVON 785-2781.

DANA L. STRONG, Captain, USAF
Supply Officer and AFIT Student

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AFLMC SCN 881178 Expires 31 January 1990

STRENGTH THROUGH KNOWLEDGE

SURVEY OF SUPPLY OFFICERS

AFLMC SCN 881176
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AIR FORCE LOGISTICS MANAGEMENT CENTER

GUNTER AFB, AL 36114-6693

SECTION I

This section contains items relating to your personal background. Please mark all of your responses on the questionnaire and then blacken the corresponding number, with a No. 2 pencil, on the answer sheet provided.

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   3. 31-35
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   5. 41-45
   6. 46-50
   7. 51-55

2. Your sex is:

   1. Male
   2. Female

3. Your rank is:

   1. 1st Lieutenant
   2. Captain
   3. Major
   4. Lieutenant Colonel
   5. Colonel

4. Your commissioning source was:

   1. OTS
   2. ROTC
   3. Service Academy
   4. Other

5. How would you classify your undergraduate degree?

   1. Liberal Arts (English, History, Music, etc.)
   2. Social Sciences (Psychology, Sociology, etc.)
   3. Business (Management, Accounting, etc.)
   4. Engineering (Civil, Electrical, Aeronautical, etc.)
   5. Sciences (Physics, Chemistry, Biology, etc.)
   6. Other

6. Your highest education level is:

1. Bachelor's Degree
2. Some graduate work
3. Master's Degree
4. Some work beyond Master's Degree
5. Doctoral Degree
6. Post Doctoral Degree

7. How much commissioned time (TAFCS) have you served in the military?

1. Less than four years
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8. Your amount of prior enlisted service time is:

1. None
2. Less than one year
3. One year, but less than two years
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9. Your current assignment corresponds to which category?

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10. What type of organization do you presently work in?

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11. Which major command do you work for?

1. Air Force Logistics Command
2. Air Force Systems Command
3. Air Training Command
4. Military Airlift Command
5. Pacific Air Command
6. Space Command
7. Strategic Air Command
8. Tactical Air Command
9. United States Air Forces Europe
10. Other (please specify) _____

12. If you are at base level, are you presently assigned to a Supply Squadron?

1. Yes
2. No

If you answered **NO** to question 12 please ***skip*** question 13 and continue with question 14; otherwise continue with question 13.

13. Your current job title is:

1. Section Chief
2. Branch Chief
3. Assistant Chief of Supply
4. Chief of Supply
5. Other (please specify) _____

14. How long have you been assigned to your current job?

1. Less than 6 months
2. At least 6 months, less than 12 months
3. At least 12 months, less than 18 months
4. At least 18 months, less than 24 months
5. At least 24 months, less than 30 months
6. At least 30 months, less than 36 months
7. At least 36 months, less than 42 months
8. At least 42 months, less than 48 months
9. 48 months or more

SECTION II

This section of the questionnaire contains a list of human behaviors exhibited by managers while they perform their daily duties. Use the scale below to **RATE HOW IMPORTANT YOU FEEL THE BEHAVIOR IS FOR A CHIEF OF SUPPLY**. Enter the number on the questionnaire and then blacken the corresponding number on the answer sheet provided.

1	2	3	4	5	6	7
Unimportant	Very Rarely Important	Rarely Important	Sometimes Important	Often Important	Very Often Important	Extremely Important

15. EMPHASIZES PERFORMANCE: The extent to which a Chief of Supply emphasizes the importance of subordinates performance and encourages subordinates to make a maximum effort. _____

16. INSPIRING SUBORDINATES: The extent to which a Chief of Supply stimulates enthusiasm among subordinates for the work of the group, and says things to build their confidence in the group's ability to successfully attain its objectives. _____

17 PROVIDES PRAISE AND RECOGNITION. The extent to which a Chief of Supply provides appropriate praise and recognition to subordinates with effective performance, and shows appreciation for special efforts and contributions made by subordinates. _____

18. STRUCTURES REWARD CONTINGENCIES. The extent to which a Chief of Supply rewards effective subordinate performance with tangible benefits, such as recognition awards, promotions, better assignments, better work schedules, extra time off, etc. _____

19. CLARIFIES WORK ROLES. The extent to which a Chief of Supply informs subordinates about their duties and responsibilities, clarifies rules and policies, and lets subordinates know what is expected of them. _____

20 SET GOALS: The extent to which a Chief of Supply, either alone or jointly with a subordinate, sets specific, challenging, but realistic, performance goals for each important aspect of the subordinate's job. _____

21 DELEGATES The extent to which a Chief of Supply delegates responsibility and authority to subordinates and allow them discretion in determining how to do their work. _____

22 PLANS AND ORGANIZES: The extent to which a Chief of Supply plans in advance how to improve efficiency and productivity, schedule work, coordinate work unit activities, accomplish task objectives and strategies, and cope with potential problems. _____

23 FORESIGHT The extent to which a Chief of Supply looks for new opportunities for the work unit to exploit, proposes new activities to undertake, and offers innovative ideas for strengthening the work unit. _____

Use the scale below to **RATE HOW IMPORTANT YOU FEEL THE BEHAVIOR IS FOR A CHIEF OF SUPPLY**

1	2	3	4	5	6	7
Unimportant	Very Rarely Important	Rarely Important	Sometimes Important	Often Important	Very Often Important	Extremely Important

24 SOLVING PROBLEMS: The extent to which a Chief of Supply takes prompt and decisive action to deal with serious work-related problems and disturbances. _____

25. FACILITATES TEAMWORK. The extent to which a Chief of Supply emphasizes teamwork and tries to promote cooperation, cohesiveness, and identification with the group. _____

26 MANAGES CONFLICT The extent to which a Chief of Supply discourages unnecessary fighting and bickering among subordinates, and helps them to settle conflicts and disagreements in a constructive manner _____

27 CRITICIZES: The extent to which a Chief of Supply criticizes specific acts of subordinates which are unacceptable to the organization, finds positive things to say, and provides opportunities for subordinates' explanations. _____

28 ADMINISTERS DISCIPLINE The extent to which a Chief of Supply takes appropriate disciplinary action to deal with a subordinate who violates a rule, disobeys an order, or has consistently poor performance. _____

29 TASK COMMUNICATION: The extent to which a Chief of Supply lets subordinates know what needs to be done, explains changes is the work place, and explains policies and procedures. _____

30 PERFORMANCE COMMUNICATION: The extent to which a Chief of Supply communicates information about the quality of subordinate's work or how well (s)he is doing. _____

31 CAREER COMMUNICATION: The extent to which a Chief of Supply discusses training opportunities with subordinates and provides them with career information on future assignments. _____

32 PERSONAL COMMUNICATION: The extent to which a Chief of Supply and subordinates discuss personal issues such as family and non-related work interests _____

33 WRITTEN COMMUNICATION The extent to which a Chief of Supply communicates with superiors, peers, and subordinates through the use of memo's, letter's, and other written correspondence _____

34 LISTENS The extent to which a Chief of Supply listens to subordinates and responds to the issues raised _____

35 ACTS CONSISTENTLY The extent to which subordinates feel a Chief of Supply is consistent in his/her responses, actions, and policies _____

Use the scale below to RATE HOW IMPORTANT YOU FEEL THE BEHAVIOR IS FOR A CHIEF OF SUPPLY.

1	2	3	4	5	6	7
Unimportant	Very Rarely Important	Rarely Important	Sometimes Important	Often Important	Very Often Important	Extremely Important

36. FLEXIBILITY: The extent to which a Chief of Supply adapts to new or unexpected situations in the work unit and allows modifications to existing plans while still maintaining control of the unit. _____

37. PATIENCE: The extent to which a Chief of Supply is willing to help subordinates over and over without complaint. _____

38. QUESTIONS POLICIES AND PROCEEDURES: The extent to which a Chief of Supply is willing to question decisions that are contrary to current policies or moral standards, or view with skepticism solutions that require large expenditures of manpower or materials. _____

39. COMMUNICATING A VISION: The extent to which a Chief of Supply is able to create mental and verbal pictures of a desirable future function or state in the minds of subordinates. _____

40. NETWORKING: The extent to which a Chief of Supply socializes with top management, is involved in community events, develops cooperative relationships with other people who are sources of support and information, and maintains relationships through periodic interaction. _____

41. MONITORS OPERATIONS: The extent to which a Chief of Supply keeps informed about the activities within the unit and checks on the performance of subordinates. _____

42. MONITORS THE ENVIRONMENT: The extent to which a Chief of Supply keeps informed about outside events that have important implications for the work unit. _____

43. CONTROL: The extent to which a Chief of Supply implements controlling methods such as preventative maintenance, reviewing major problems and project delays, inspecting work, and conducting follow-up inspections. _____

44. COMMITTMENT TO A VISION: The extent to which a Chief of Supply involves subordinates in shaping the future state of the organization and refuses to give up that view of the future in the face of great adversity. _____

45. TRUST: The extent to which subordinates feel they can discuss problems and difficulties with a Chief of Supply without jeopardizing their position or having it "held against" them later. _____

46. TRUTHFULNESS: The extent to which a Chief of Supply is honest in evaluating his/her responses to suggestions or proposals made by subordinates _____

47. ENTHUSIASM: The extent to which a Chief of Supply demonstrates interest or excitement about his job _____

Use the scale below to RATE HOW IMPORTANT YOU FEEL THE BEHAVIOR IS FOR A CHIEF OF SUPPLY.

1	2	3	4	5	6	7
Unimportant	Very Rarely Important	[illegible]rly Important	Sometimes Important	Often Important	Very Often Important	Extremely Important

48. DECISION MAKING: The extent to which a Chief of Supply diagnoses the situation, searches for solutions, evaluates the consequences, and selects an alternative. _____

49. ALLOCATES RESOURCES: The extent to which a Chief of Supply chooses among competing resource demands by time management, designing work systems for subordinates, and authorizing implementation of major decisions. _____

50. ENTREPRENEUR. The extent to which a Chief of Supply identifies and takes advantage of new opportunities, and controls the implementation of subsequent changes. _____

51. PEER TEAM BUILDING: The extent to which a Chief of Supply develops implicit contacts with peers to serve mutual needs and trade resources in real-time. _____

52. INTROSPECTION: The extent to which a Chief of Supply understands his job, is sensitive to his impact on the organization, and is aware of his own strengths and weaknesses _____

53. CONDUCTS EFFECTIVE GROUP MEETINGS: The extent to which a Chief of Supply adequately prepares for, makes presentations, and conducts discussions with peers or subordinates. _____

54. MANAGING STRESS: The extent to which a Chief of Supply identifies sources of major stress, develops effective time management techniques, and develops effective coping mechanisms. _____

55. COMMUNICATING A SHARED UNDERSTANDING: The extent to which a Chief of Supply ensures each member of the work unit shares the same concept of project taskings, goals, and performance expectations. _____

56. NEGOTIATION: The extent to which a Chief of Supply resolves conflict with people outside the unit through commitment of resources, and compromise on behalf of the organization. _____

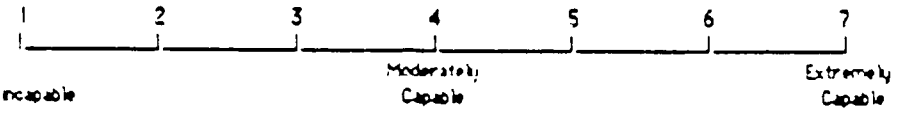
57. LIASON: The extent to which a Chief of Supply interacts with peers and people outside the organization to gain favors and information. _____

58. JUDGEMENT: The extent to which a Chief of Supply's actions are an appropriate response to the situation at hand. _____

59. INTERACTING WITH SUPERIORS: The extent to which a Chief of Supply communicates relevant information to superiors about decisions, plans, unit activities, and requested material _____

SECTION III

Now, using the scale below **RATE HOW CAPABLE YOU FEEL YOU ARE TODAY IN PERFORMING THE GIVEN BEHAVIOR**. Enter the number on the questionnaire and then blacken the corresponding number on the answer sheet provided.



60 EMPHASIZES PERFORMANCE: The extent to which you can emphasize the importance of subordinates performance and encourage subordinates to make a maximum effort. _____

61 INSPIRING SUBORDINATES The extent to which you can stimulate enthusiasm among subordinates for the work of the group, and say things to build their confidence in the group's ability to successfully attain its objectives. _____

62. PROVIDES PRAISE AND RECOGNITION. The extent to which you can provide appropriate praise and recognition to subordinates with effective performance, and show appreciation for special efforts and contributions made by subordinates _____

63 STRUCTURES REWARD CONTINGENCIES The extent to which you can reward effective subordinate performance with tangible benefits, such as recognition awards, promotions, better assignments, better work schedules, extra time off, etc. _____

64 CLARIFIES WORK ROLES The extent to which you can inform subordinates about their duties and responsibilities, clarify rules and policies, and let subordinates know what is expected of them _____

65 SETS GOALS The extent to which you can, either alone or jointly with a subordinate, set specific, challenging, but realistic, performance goals for each important aspect of the subordinate's job _____

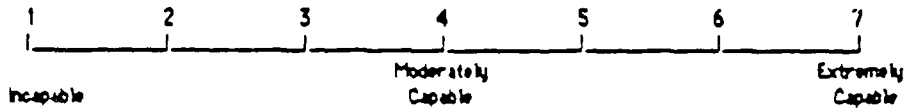
66 DELEGATES The extent to which you can delegate responsibility and authority to subordinates and allow them discretion in determining how to do their work _____

67 PLANS AND ORGANIZES The extent to which you can plan in advance how to improve efficiency and productivity, schedule work, coordinate work unit activities, accomplish task objectives and strategies, and cope with potential problems _____

68 FORESIGHT The extent to which you can look for new opportunities for the work unit to exploit, propose new activities to undertake, and offer innovative ideas for strengthening the work unit _____

69 SOLVING PROBLEMS The extent to which you can take prompt and decisive action to deal with serious work-related problems and disturbances _____

Use the scale below **RATE HOW CAPABLE YOU FEEL YOU ARE TODAY IN PERFORMING THE GIVEN BEHAVIOR.**



70 FACILITATES TEAMWORK The extent to which you emphasize teamwork and promote cooperation, cohesiveness, and identification with the group. _____

71 MANAGES CONFLICT The extent to which you can discourage unnecessary fighting and bickering among subordinates, and help them to settle conflicts and disagreements in a constructive manner _____

72 CRITICIZES The extent to which you can criticize specific acts of subordinates which are unacceptable to the organization, find positive things to say, and provide opportunities for subordinates explanations _____

73 ADMINISTERS DISCIPLINE The extent to which you can take appropriate disciplinary action to deal with a subordinate who violates a rule, disobeys an order, or has consistently poor performance _____

74 TASK COMMUNICATION The extent to which you can let subordinates know what needs to be done, explain changes is the work place, and explain policies and procedures _____

75 PERFORMANCE COMMUNICATION The extent to which you can communicate information about the quality of subordinate s work or how well (s)he is doing. _____

76 CAREER COMMUNICATION The extent to which you can discuss training opportunities with subordinates and provide them with career information on future assignments _____

77 PERSONAL COMMUNICATION The extent to which you and subordinates discuss personal issues such as family and non-related work interests. _____

78 WRITTEN COMMUNICATION The extent to which you can communicate with superiors, peers, and subordinates through the use of memos, letters, and other written correspondence _____

79 LISTENS The extent to which you can listen to subordinates and respond to those issues raised _____

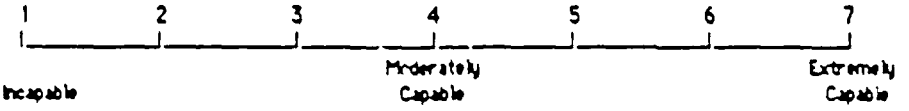
80 ACTS CONSISTENTLY The extent to which subordinates feel you are consistent in your responses, actions, and policies. _____

****
****

Please take your responses from the booklet and fill in the FIRST answer sheet now. Your first answer sheet should be completely filled. If it is not completely filled in, go back and check the sequencing of your answers. You may have skipped an item. Use the SECOND answer sheet to respond to the remaining items in the questionnaire.

****
****

Use the scale below RATE HOW CAPABLE YOU FEEL YOU ARE TODAY IN PERFORMING THE GIVEN BEHAVIOR.



1. FLEXIBILITY: The extent to which you can adapt to new or unexpected situations in the work unit and allow modifications to existing plans while still maintaining control of the unit. _____

2. PATIENCE: The extent to which you are willing to help subordinates over and over without complaint. _____

3. QUESTIONS POLICIES AND PROCEEDURES: The extent to which you are willing to question decisions that are contrary to current policies or moral standards, or view with skepticism solutions which require large expenditures of manpower or materials. _____

4. COMMUNICATING A VISION: The extent to which you are able to create mental and verbal pictures of a desirable future function or state in the minds of subordinates. _____

5. NETWORKING: The extent to which you can socialize with top management, are involved in community events, develop cooperative relationships with other people who are sources of support and information, and maintain relationships through periodic interaction. _____

6. MONITORS OPERATIONS: The extent to which you keep informed about the activities within the unit and check on the performance of subordinates. _____

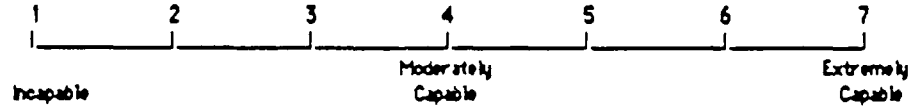
7. MONITORS THE ENVIRONMENT: The extent to which you keep informed about outside events that have important implications for the work unit. _____

8. CONTROL: The extent to which you implement control methods such as preventative maintenance, reviewing major problems and project delays, inspecting work, and conducting follow-up inspections _____

9. COMMITMENT TO A VISION: The extent to which you can involve subordinates in shaping the future state of the organization and refuse to give up that view of the future in the face of great adversity _____

10. TRUST: The extent to which subordinates feel they can discuss problems and difficulties with you without jeopardizing their position or having it "held against" them later. _____

Use the scale below RATE HOW CAPABLE YOU FEEL YOU ARE TODAY IN PERFORMING THE GIVEN BEHAVIOR



11. TRUTHFULNESS: The extent to which you are honest in evaluating your responses to the suggestions or proposals made by subordinates. _____

12. ENTHUSIASM: The extent to which you can demonstrate interest or excitement about your job. _____

13. DECISION MAKING. The extent to which you can diagnose the situation, search for solutions, evaluate the consequences, and select an alternative. _____

14 ALLOCATES RESOURCES: The extent to which you can choose among competing resource demands by time management, design work systems of subordinates, and authorize implementation for major decisions. _____

15. ENTREPRENEUR: The extent to which you identify and take advantage of new opportunities, and control the implementation of subsequent changes. _____

16. PEER TEAM BUILDING. The extent to which you can develop implicit contacts with peers to serve mutual needs and trade resources in real-time. _____

17. INTROSPECTION: The extent to which you understand your job, are sensitive to your impact on the organization, and are aware of your own strengths and weaknesses. _____

18 CONDUCTS EFFECTIVE GROUP MEETINGS: The extent to which you can adequately prepares for, makes presentations, and conducts discussions with peers or subordinates. _____

19. MANAGING STRESS: The extent to which you can identify sources of major stress, develop effective time management techniques, and develops effective coping mechanisms. _____

20 COMMUNICATING A SHARED UNDERSTANDING. The extent to which you can ensure each member of the work unit shares the same concept of project taskings, goals, and performance expectations. _____

21 NEGOTIATION: The extent to which you can resolve conflict with people outside the unit through commitment of resources, and compromise on behalf of the organization. _____

22 LIASON: The extent to which you can interact with peers and people outside the organization to gain favors and information. _____

23 JUDGEMENT: The extent to which your actions are an appropriate response to the situation at hand _____

24 INTERACTING WITH SUPERIORS: The extent to which you can communicate relevant information to superiors about decisions, plans, unit activities, and requested material _____

SECTION IV

The purpose of this section of the questionnaire is to determine your preferences for training methods. FROM EACH PAIR SHOWN, SELECT THE METHOD YOU PREFER. Mark all responses on the questionnaire and then blacken the appropriate oval on your **SECOND** answer key.

25. 1. Video Taped Lecture
2. Correspondence Course

26. 1. Video Taped Lecture
2. Classroom Lecture

27. 1. Video Taped Lecture
2. Shadowing Senior Officers

28. 1. Correspondence Course
2. Computer Based Learning

29. 1. Correspondence Course
2. AFIT Short Course

30. 1. Correspondence Course
2. Professional Development Seminar

31. 1. Computer Based Learning
2. AFIT Short Course

32. 1. Computer Based Learning
2. Profession ' Development Seminar

33. 1. Classroom Lecture
2. AFIT Short Course

34. 1. AFIT Short Course
2. Shadowing Senior Officers

35. 1. Shadowing Senior Officers
2. Professional Development Seminar

36. 1. Video Taped Lecture
2. Computer Based Learning

37. 1. Video Taped Lecture
2. AFIT Short Course

38. 1. Video Taped Lecture
2. Professional Development Seminar

39. 1. Correspondence Course
2. Classroom Lecture

40. 1. Correspondence Course
2. Shadowing Senior Officers

41. 1. Computer Based Learning
2. Classroom Lecture

42. 1. Computer Based Learning
2. Shadowing Senior Officers

43. 1. Classroom Lecture
2. Shadowing Senior Officers

44. 1. Classroom Lecture
2. Professional Development Seminar

45. 1. AFIT Short Course
2. Professional Development Seminar

****

Please take your responses from the booklet and fill in the **SECOND** answer sheet now. You should fill in number 1 through number 24. If you have more or less than 24 answers, go back and check the sequencing of your answers.

When you have completed the comments section place **both answer sheets and the questionnaire booklet** in the pre-addressed envelope. Please mail the responses as soon as possible.

****

Thank you for spending the time to complete this survey. I appreciate your efforts.

If you are interested in receiving a summary of the results of this research please include your name and address below.

Please provide any other comments you wish to add below.

Many of the respondents from both surveys made written comments concerning both the survey instrument itself and the supply carreer field in general. Although some of these comments contained insightful information, they have not been included in this report. They are available from the author upon request.

Appendix C: Demographic Data for Chiefs of Supply

1. Your age is:

	Frequency	Percent
21-25	0	0.0
26-30	0	0 0
31-35	3	4.9
36-40	21	34 4
41-45	36	59.0
46-50	1	1.6
51 55	0	0.0
Missing	0	0.0
Total Number of Cases in Population	61	100 0

2. Your sex is:

	Frequency	Percent
Male	53	86.9
Female	8	13.1
Missing	0	0 0

3 Your rank is:

	Frequency	Percent
1st Lieutenant	0	0.0
Captain	6	9 8
Major	26	42.6
Lieutenant Colonel	29	47 5
Colonel	0	0 0
Missing	0	0.0

4. Your commissioning source was:

	Frequency	Percent
OTS	32	52.5
ROTC	28	45.9
Service Academy	1	1.6
Other		
Missing		

5. How would you classify your undergraduate degree?

	Frequency	Percent
Liberal Arts	11	18.0
Social Sciences	6	9.8
Business	35	57.4
Engineering	2	3.3
Sciences	5	8.2
Other	2	3.3
Missing	0	0.0

6. Your highest education level is:

	Frequency	Percent
Bachelor's Degree	2	3.3
Some graduate work	3	4.9
Master's Degree	50	82.0
Some work beyond Master's Degree	6	9.8
Doctoral Degree	0	0.0
Post Doctoral Degree	0	0.0
Missing	0	0.0

7. How much commissioned time (TAFCS) have you served in the military?

	Frequency	Percent
Less than four yrs	0	0.0
Four yrs, but > six yrs	0	0.0
Six yrs, but > eight yrs	2	3.3
Eight yrs, but > ten yrs	2	3.3
Ten yrs, but > twelve yrs	4	6.6
Twelve yrs, but > fourteen yrs	3	4.9
Fourteen yrs, but > sixteen yrs	13	21.3
Sixteen yrs, but > eighteen yrs	7	11.5
Eighteen yrs, but > twenty yrs	22	13.1
Twenty yrs or more	8	3.1
Missing	0	0.0

8. Your amount of prior enlisted service time is:

	Frequency	Percent
None	39	63.9
Less than one year	4	6.6
One year, but > two yrs	1	1.6
Two yrs, but > four yrs	2	3.3
Four yrs, but > eight yrs	3	4.9
Eight yrs or more	12	19.7
Missing		

9. Your current assignment corresponds to which category?

	Frequency	Percent
Primary AFSC	54	88.5
Career Broadening, Non-Rated Supp	2	3.3
Career Broadening, Rated Supp	4	6.6
Other	1	1.6
Missing		

10. What type of organization do you presently work in?

	Frequency	Percent
Joint		
Major Air Command	1	16.0
HQ Numbered AF	0	0.0
Air Logistics Center	0	0.0
Base Level	57	93.4
HQ AFLC	1	1.6
Other	1	1.6
Missing	1	1.6

11. Which major command do you work for?

	Frequency	Percent
Air Force Logistics Command	0	0.0
Air Force Systems Command	1	1.6
Air Training Command	7	11.5
Military Airlift Command	6	9.8
Pacific Air Command	2	3.3
Space Command	0	0.0
Strategic Air Command	14	23.0
Tactical Air Command	13	21.3
United States Air Forces Europe	14	23.0
Other	4	6.6
Missing	0	0.0

12. If you are at base level, are you presently assigned to a Supply Squadron?

	Frequency	Percent
Yes	58	95.1
No	2	3.3
Missing	1	1.6

If you answered **NO** to question 12 please ***skip*** question 13 and continue with question 14;
otherwise continue with question 13.

13. Your current job title is:

	Frequency	Percent
Section Chief	0	0.0
Branch Chief	0	0.0
Assistant Chief of Supply	0	0.0
Chief of Supply	61	100.0
Other	0	0.0
Missing	0	0.0

14. How long have you been assigned to your current job?

	Frequency	Percent
Less than 6 mos	7	11.5
At least 6 mos, > 12 mos	18	29.5
At least 12 mos, > 18 mos	8	13.1
At least 18 mos, > 24 mos	15	24.6
At least 24 mos, > 30 mos	4	6.6
At least 30 mos, > 36 mos	1	1.6
At least 36 mos, > 42 mos	6	9.8
At least 42 mos, > 48 mos	2	3.3
48 mos or more	0	0.0
Missing	0	0.0

Appendix D: Demographic Data for Supply Officers

1. Your age is:

	Frequency	Percent
21-25	19	4.9
26-30	86	22.2
31-35	133	34.3
36-40	112	28.9
41-45	37	9.5
46-50	1	0.3
51-55	0	0.0
Missing	0	0.0
Total Number of Cases in Population	388	100.0

2. Your sex is:

	Frequency	Percent
Male	302	77.8
Female	86	22.2
Missing	0	0.0

3. Your rank is:

	Frequency	Percent
1st Lieutenant	75	19.3
Captain	263	67.8
Major	49	12.6
Lieutenant Colonel	0	0.0
Colonel	0	0.0
Missing	1	0.3

4. Your commissioning source was:

	Frequency	Percent
OTS	239	61.6
ROTC	136	35.1
Service Academy	12	3.1
Other	1	0.3
Missing	0	0.0

5. How would you classify your undergraduate degree?

	Frequency	Percent
Liberal Arts	59	15.2
Social Sciences	51	13.1
Business	184	47.4
Engineering	23	5.9
Sciences	49	12.6
Other	20	5.2
Missing	2	0.5

6 Your highest education level is:

	Frequency	Percent
Bachelor's Degree	77	19.8
Some graduate work	105	27.1
Master's Degree	188	48.5
Some work beyond Master's Degree	17	4.4
Doctoral Degree	1	0.3
Post Doctoral Degree	0	0.0
Missing	0	0.0

7. How much commissioned time (TAFCS) have you served in the military?

	Frequency	Percent
Less than four yrs	68	17.5
Four yrs, but > six yrs	61	15.7
Six yrs, but > eight yrs	60	15.5
Eight yrs, but > ten yrs	89	22.9
Ten yrs, but > twelve yrs	78	20.1
Twelve yrs, but > fourteen yrs	26	6.7
Fourteen yrs, but > sixteen yrs	5	1.3
Sixteen yrs, but > eighteen yrs	1	0.3
Eighteen yrs, but > twenty yrs	0	0.0
Twenty yrs or more	0	0.0
Missing	0	0.0

8. Your amount of prior enlisted service time is

	Frequency	Percent
None	179	46.1
less than one year	8	2.1
One year, but > two yrs	5	1.3
Two yrs, but > four yrs	20	5.2
Four yrs, but > eight yrs	75	19.3
Eight yrs or more	101	26.0
Missing	0	0.0

9. Your current assignment corresponds to which category?

	Frequency	Percent
Primary AFSC	301	77.6
Career Broadening, Non-Rated Supp	48	12.4
Career Broadening, Rated Supp	9	2.3
Other	30	7.7
Missing	0	0.0

10. What type of organization do you presently work in?

	Frequency	Percent
Joint	18	4.6
Major Air Command	53	13.7
HQ Numbered AF	14	3.6
Air Logistics Center	28	7.2
Base Level	204	52.6
HQ AFLC	27	7.0
Other	44	11.3
Missing	0	0.0

11. Which major command do you work for?

	Frequency	Percent
Air Force Logistics Command	55	14.2
Air Force Systems Command	6	1.5
Air Training Command	29	7.5
Military Airlift Command	33	8.5
Pacific Air Command	25	6.4
Space Command	6	1.5
Strategic Air Command	44	11.3
Tactical Air Command	66	17.0
United States Air Forces Europe	58	14.9
Other	65	16.8
Missing	1	0.3

12. If you are at base level, are you presently assigned to a Supply Squadron?

	Frequency	Percent
Yes	186	47.9
No	115	29.6
Missing	87	22.5

If you answered **NO** to question 12 please ***skip*** question 13 and continue with question 14;
otherwise continue with question 13.

13. Your current job title is:

	Frequency	Percent
Section Chief	12	3.1
Branch Chief	171	44.1
Assistant Chief of Supply	5	1.3
Chief of Supply	1	0.3
Other	23	5.9
Missing	176	45.4

14. How long have you been assigned to your current job?

	Frequency	Percent
Less than 6 mos	85	21.9
At least 6 mos, > 12 mos	104	26.8
At least 12 mos, > 18 mos	65	16.8
At least 18 mos, > 24 mos	50	12.9
At least 24 mos, > 30 mos	28	7.2
At least 30 mos, > 36 mos	22	5.7
At least 36 mos, > 42 mos	10	2.6
At least 42 mos, > 48 mos	3	0.8
48 mos or more	5	1.3
Missing	16	4.1

Appendix E: Demographic Data for Total Population

1. Your age is:

	Frequency	Percent
21-25	19	4.2
26-30	86	19.2
31-35	136	30.3
36-40	133	29.6
41-45	73	16.3
46-50	2	0.4
51-55	0	0.0
Missing	0	0.0
Total Number of Cases in Population	449	100.0

2. Your sex is:

	Frequency	Percent
Male	355	79.1
Female	94	20.9
Missing	0	0.0

3. Your rank is:

	Frequency	Percent
1st Lieutenant	75	16.7
Captain	269	59.9
Major	75	16.7
Lieutenant Colonel	29	6.5
Colonel	0	0.0
Missing	1	0.2

4. Your commissioning source was:

	Frequency	Percent
OTS	271	60.4
ROTC	164	36.5
Service Academy	13	2.9
Other	1	0.2
Missing	0	0.0

5. How would you classify your undergraduate degree?

	Frequency	Percent
Liberal Arts	70	15.6
Social Sciences	57	12.7
Business	219	48.8
Engineering	25	5.6
Sciences	54	21.0
Other	22	4.9
Missing	2	0.4

6. Your highest education level is:

	Frequency	Percent
Bachelor's Degree	79	17.6
Some graduate work	108	24.1
Master's Degree	238	53.0
Some work beyond Master's Degree	23	5.1
Doctoral Degree	1	0.2
Post Doctoral Degree	0	0.0
Missing	0	0.0

7. How much commissioned time (TAFCS) have you served in the military?

	Frequency	Percent
Less than four yrs	68	15.1
Four yrs, but > six yrs	61	13.6
Six yrs, but > eight yrs	62	13.8
Eight yrs, but > ten yrs	91	20.3
Ten yrs, but > twelve yrs	82	18.3
Twelve yrs, but > fourteen yrs	29	6.5
Fourteen yrs, but > sixteen yrs	18	4.0
Sixteen yrs, but > eighteen yrs	8	1.8
Eighteen yrs, but > twenty years	22	4.9
Twenty yrs or more	8	1.8
Missing	0	0.0

8. Your amount of prior enlisted service time is:

	Frequency	Percent
None	218	48.6
Less than one year	12	2.7
One year, but > two yrs	6	1.3
Two yrs, but > four yrs	22	4.9
Four yrs, but > eight yrs	78	17.5
Eight yrs or more	113	25.2
Missing	0	0.0

9. Your current assignment corresponds to which category?

	Frequency	Percent
Primary AFSC	355	79.1
Career Broadening, Non-Rated Supp	50	11.1
Career Broadening, Rated Supp	13	2.9
Other	30	6.7
Missing	1	0.2

10. What type of organization do you presently work in?

	Frequency	Percent
Joint	18	4.0
Major Air Command	54	12.0
HQ Numbered AF	14	3.1
Air Logistics Center	28	6.2
Base Level	261	58.1
HQ AFLC	28	6.2
Other	45	10.0
Missing	1	0.2

11. Which major command do you work for?

	Frequency	Percent
Air Force Logistics Command	55	12.2
Air Force Systems Command	7	1.6
Air Training Command	36	8.0
Military Airlift Command	39	8.7
Pacific Air Command	27	6.0
Space Command	6	1.3
Strategic Air Command	58	12.9
Tactical Air Command	79	17.6
United States Air Forces Europe	72	16.0
Other	69	15.4
Missing	1	0.2

12. If you are at base level, are you presently assigned to a Supply Squadron?

	Frequency	Percent
Yes	244	54.3
No	117	26.1
Missing	88	19.6

If you answered **NO** to question 12 please ***skip*** question 13 and continue with question 14;
otherwise continue with question 13.

13. Your current job title is:

	Frequency	Percent
Section Chief	12	2.7
Branch Chief	171	38.1
Assistant Chief of Supply	5	1.1
Chief of Supply	62	13.8
Other	23	5.1
Missing	176	39.2

14 How long have you been assigned to your current job?

	Frequency	Percent
Less than 6 mos	92	20.5
At least 6 mos, > 12 mos	122	27.2
At least 12 mos, > 18 mos	73	16.3
At least 18 mos, > 24 mos	65	14.5
At least 24 mos, > 30 mos	32	7.1
At least 30 mos, > 36 mos	23	5.1
At least 36 mos, > 42 mos	16	3.6
At least 42 mos, > 48 mos	5	1.1
48 mos or more	5	1.1
Missing	16	3.6

Appendix F: Correlation Matrix of Importance Versus Capability Utilizing the Ten Most Important Skills for a Chief of Supply

	CAP1	CAP2	CAP3	CAP7	CAP10	CAP11
IMPT1	.2790	.1648	.1640	-.0011	.1369	.1896
	(446)	(446)	(446)	(446)	(446)	(446)
	P= .000	P= .000	P= .000	P= .491	P= .002	P= .000
IMPT2	.2136	.2664	.2450	.0520	.0413	.2304
	(446)	(446)	(446)	(446)	(446)	(446)
	P= .000	P= .000	P= .000	P= .137	P= .098	P= .000
IMPT3	.0710	.1738	.2563	.0674	.0216	.1178
	(446)	(446)	(446)	(446)	(446)	(446)
	P= .067	P= .000	P= .000	P= .078	P= .325	P= .007
IMPT7	.2976	.1645	.1967	.2193	.1776	.1709
	(446)	(446)	(446)	(446)	(446)	(446)
	P= .000	P= .000	P= .000	P= .000	P= .000	P= .000
IMPT10	.1646	.1743	.2416	.0741	.1648	.2243
	(446)	(446)	(446)	(446)	(446)	(446)
	P= .000	P= .000	P= .000	P= .059	P= .000	P= .000
IMPT11	.2545	.2678	.2542	.1835	.1875	.3406
	(446)	(446)	(446)	(446)	(446)	(446)
	P= .000	P= .000	P= .000	P= .000	P= .000	P= .000
IMPT20	.1902	.1918	.2036	.0813	.1087	.2182
	(446)	(446)	(446)	(446)	(446)	(446)
	P= .000	P= .000	P= .000	P= .043	P= .011	P= .000
IMPT21	.0570	.1063	.1045	.1229	.0983	.1600
	(446)	(446)	(446)	(446)	(446)	(446)
	P= .115	P= .012	P= .014	P= .005	P= .019	P= .000
IMPT31	.2150	.2397	.2342	.0723	.0798	.2726
	(445)	(445)	(445)	(445)	(445)	(445)
	P= .000	P= .000	P= .000	P= .064	P= .046	P= .000
IMPT32	.1910	.1920	.1799	.1246	.0872	.2032
	(446)	(446)	(446)	(446)	(446)	(446)
	P= .000	P= .000	P= .000	P= .004	P= .033	P= .000
IMPT33	.2260	.2784	.2341	.1209	.1305	.2585
	(446)	(446)	(446)	(446)	(446)	(446)
	P= .000	P= .000	P= .000	P= .005	P= .003	P= .000
IMPT44	.1108	.2315	.1681	.1209	.1651	.2910
	(446)	(446)	(446)	(446)	(446)	(446)
	P= .010	P= .000	P= .000	P= .005	P= .000	P= .000

	CAP20	CAP21	CAP31	CAP32	CAP33	CAP44
IMPT1	.1292 (443) P= .003	.1576 (444) P= .000	.1519 (441) P= .001	.0993 (441) P= .019	.1148 (441) P= .008	.1500 (440) P= .001
IMPT2	.1546 (443) P= .001	.1543 (444) P= .001	.1750 (441) P= .000	.1294 (441) P= .003	.1233 (441) P= .005	.1235 (440) P= .003
IMPT3	.1606 (443) P= .000	.1320 (444) P= .003	.1554 (441) P= .001	.1233 (441) P= .005	.0947 (441) P= .023	.0992 (440) P= .019
IMPT7	.1782 (443) P= .000	.2490 (444) P= .000	.1369 (441) P= .002	.1263 (441) P= .004	.0510 (441) P= .143	.1904 (440) P= .000
IMPT10	.2042 (443) P= .000	.1745 (444) P= .000	.1463 (441) P= .001	.0895 (441) P= .030	.0914 (441) P= .028	.1278 (440) P= .004
IMPT11	.1970 (443) P= .000	.1733 (444) P= .000	.1170 (441) P= .007	.1943 (441) P= .000	.1442 (441) P= .001	.2081 (440) P= .000
IMPT20	.2378 (443) P= .000	.1313 (444) P= .003	.2047 (441) P= .000	.1488 (441) P= .001	.0395 (441) P= .204	.1532 (440) P= .001
IMPT21	.1416 (443) P= .001	.1547 (444) P= .001	.1779 (441) P= .000	.1030 (441) P= .015	.0569 (441) P= .117	.1195 (440) P= .006
IMPT31	.1887 (442) P= .000	.2032 (443) P= .000	.2660 (440) P= .000	.1592 (440) P= .000	.1062 (440) P= .013	.1876 (439) P= .000
IMPT32	.2220 (443) P= .000	.2518 (444) P= .000	.2200 (441) P= .000	.3296 (441) P= .000	.1478 (441) P= .001	.2212 (440) P= .000
IMPT33	.1787 (443) P= .000	.2277 (444) P= .000	.1414 (441) P= .001	.2062 (441) P= .000	.3970 (441) P= .000	.2319 (440) P= .000
IMPT44	.2051 (440) P= .000	.1954 (443) P= .000	.1444 (444) P= .001	.1606 (441) P= .000	.1498 (441) P= .001	.1671 (441) P= .000

Key for Correlation Matrix

IMPT = Important Behavior for a Chief of Supply

CAP = Capability of Respondent

Numeric Value:

1 = Emphasizing Performance

2 = Inspiring Subordinates

3 = Providing Praise and Recognition

7 = Delegating

10 = Solving Problems

11 = Facilitating Teamwork

20 = Listening

21 = Acting Consistently

31 = Building Trust

32 = Truthfulness

33 = Enthusiasm

44 = Judgment

Appendix G: Significant T-tests

Table 10
Significant T-tests

Variables	F-Value	Sig.	T-Value	Sig.
Skills Important for a Chief of Supply				
Providing Praise and Recognition	2.08	.001	2.03	.043
Clarifying Work Roles	1.00	.950	-2.73	.008
Criticism	1.18	.364	-2.13	.037
Written Communication	1.14	.548	2.03	.046
Communicating a Vision	1.08	.720	2.03	.046
Commitment to a Vision	1.21	.362	2.03	.046
Enthusiasm	2.22	.000	1.98	.049
Communicating a Shared Understanding	1.51	.052	2.20	.031
Present Capability to Accomplish Skills				
Administering Discipline	1.39	.121	3.37	.001
Acting Consistently	1.28	.248	2.13	.036
Commitment to a Vision	1.19	.428	2.10	.039
Judgment	1.68	.016	2.48	.013
Skills Requiring Training				
Clarifying Work Roles	1.42	.100	-2.37	.020
Criticism	1.10	.660	-2.09	.040
Administering Discipline	1.34	.165	-3.11	.003
Career Communication	1.46	.076	-3.24	.002

Appendix H: Ten Most Important Skills for a Chief of Supply for all Sub-Populations by Rank and Mean

Table 11
Chiefs of Supply--Ten Most Important Skills

Skill	Ranking	Mean
Acts Consistently	1	6 75
Truthfulness	2	6 64
Trust	3	6.57
Provides Praise and Recognition	4	6.51
Judgment	5	6.48
Listening	6	6.48
Enthusiasm	7	6.43
Emphasizes Performance	8	6 36
Inspiring Subordinates	9	6 36
Solving Problems	10	6 34
Facilitates Teamwork	10	6.34

Table 12
Supply Officers--Ten Most Important Skills

Skill	Ranking	Mean
Acts Consistently	1	6 61
Truthfulness	2	6 53
Trust	3	6 53
Judgment	4	6 36
Solving Problems	5	6 36
Listening	6	6 34
Inspiring Subordinates	7	6 26
Provides Praise and Recognition	8	6 26
Emphasizes Performance	9	6 25
Delegation	10	6 25

Table 13
Total Population--Ten Most Important Skills

Skill	Ranking	Mean
Acts Consistently	1	6 63
Truthfulness	2	6 55
Trust	3	6 53
Judgment	4	6 38
Listening	5	6 36
Solving Problems	6	6 36
Provides Praise and Recognition	7	6 29
Inspiring Subordinates	8	6 27
Emphasizes Performance	9	6 26
Delegation	10	6 25

Appendix I. The Top Ten Skills Requiring Further Training for all Sub-Populations by Rank and Mean

Table 14
Chiefs of Supply--Top Ten Skills Needing Training

Skill	Ranking	Mean
Inspiring Subordinates	1	61
Providing Praise and Recognition	2	54
Acting Consistently	3	51
Communicating a Shared Understanding	4	49
Foresight	5	44
Emphasizing Performance	6	43
Performance Communication	7	43
Enthusiasm	8	41
Introspection	9	41
Planning and Organizing	10	39
Setting Goals	10	39

Table 15
Supply Officers--Top Ten Skills Needing Training

Skill	Ranking	Mean
Acting Consistently	1	.60
Clarifying Work Roles	2	.54
Inspiring Subordinates	3	.51
Administering Discipline	4	.48
Judgment	5	.48
Emphasizing Performance	6	.46
Solving Problems	7	.43
Performance Communication	8	.37
Managing Stress	9	.35
Planning and Organizing	10	.34

Table 16
Total Population–Top Ten Skills Needing Training

Skill	Ranking	Mean
Acting Consistently	1	59
Inspiring Subordinates	2	.52
Clarifying Work Roles	3	.48
Judgment	4	.45
Emphasizing Performance	5	.45
Solving Problems	6	.42
Administering Discipline	7	.41
Performance Communication	8	.38
Managing Stress	9	35
Planning and Organizing	10	35

Bibliography

Askew, Donald C. "Military Management: The Future in Retrospect." Parameters, 19: 38-45 (Jun 1989)

Bailey, Joseph C. "Clues for Success in the Presidents Job." In Eliza G. C. Collins (Ed.), Executive Success: Making It in Management. NY: John Wiley and Sons, Inc., 1983.

Bolt, James F. "The Future is Already Here" New Management, 4, 27-29 (Winter 1987).

Brannam, Colonel C. B. Chief Supply and Fuels Policy Division, Directorate of Maintenance and Supply. Telephone interview. HQ USAF, Washington D.C., 13 July 1989.

Byrd, Richard E. "Corporate Leadership Skills: A New Synthesis." Organizational Dynamics, 16: 34-43 (Summer 1987)

Contrails: The Air Force Cadet Handbook. CO: United States Air Force Academy, Vol. 24, 1978-1978.

Daft, Richard L., and Richard M. Steers. Organizations: A Micro/Macro Approach. Glenview IL: Scott, Foresman and Company, 1986.

Denning, Major David L., Chief, Supply Officer Assignments. Telephone interview. Randolph AFB TX, 30 November 1988.

Department of the Air Force; USAF Formal Schools Catalog. AFM 50-5. Washington: HQ USAF, 1 June 1989.

Eckles, Robert W. et al. Supervisory Management. NY: Wiley and Sons, 1981.

Emory, C. William Business Research Methods. Homewood IL: Richard D. Irwin, Inc., 1985.

Engelage, Lt Col James R. "Developing Positive Leadership Skills." Military Review, 65: 48-51 (Dec 1985).

Gardner, John W. "The Tasks of Leadership." New Management 4: 9-14 (Spring 1987).

------"The Context and Attributes of Leadership." New Management, 5: 16-22 (Spring 1988).

Gardner, Major Gregory C. "A Team Focus for Leadership." Marine Corps Gazette, 67: 74-79 (Mar 1987).

Gray, Major Lewis H., Jr. "Integrity: What Are the Data Telling Us?" Air University Review 36: 83-92 (Sep-Oct 1985).

Golde, Roger A. "Management Training? Get Serious!" New Management, 4: 30-33 (Winter 1987).

Goldstein, Irwin L. Training in Organizations: Needs Assessment, Development, and Evaluation (Second Edition). Monterey CA: Brooks/Cole Publishing Co., 1986.

Greiner, Larry E. "Confessions of an Executive Educator." New Management, 4: 34-38 (Winter 1987).

Hall-Sheehy, James W. "Unknown Vietnam Veteran Manager." Harvard Business Review 54: 117-125 (May-Jun 1986).

Harrison, Frederick C. (Editor). Spirit of Leadership: Inspiring Quotations of Leaders. Hermantown TN: Leadership and Development Inc., 1989.

Howard, Major Patrick M et al. Supply Officers Guide Supplement. Report No. LS871076. AFLMC, Gunter AFB AL, 1988.

Illsley, Kevin D. Former Supply Training Staff Officer. Personal interview. AFIT/LSG Wright-Patterson AFB OH, 15 July 1989

Jones, Lt Gen (Ret) William K. "Delegate." Marine Corps Gazette, 27: 28-29 (Sep 1988).

Katz, Daniel and Robert L Kahn. The Social Psychology of Organizations (Second Edition). NY: John Wiley and Sons, Inc., 1978.

Katz, Robert L. "Skills of an Effective Administrator." Harvard Business Review, 33: 33-42 (Jan-Feb 1955).

-----"Skills of an Effective Administrator." Harvard Business Review, 52: 90-102 (Sep-Oct 1974).

Kelly, Harold H. "Attribution in Social Interaction." In Edward E Jones, et al., (Editors), Attribution: Perceiving the Causes of Behavior :1-26. Morrison NJ. General Learning Press, 1972.

Klein, Janice A. and Pamela A. Posey. "Good Supervisors Are Good Supervisors--Anywhere." Harvard Business Review, 6: 125-128 (Nov-Dec 1986).

Krysa, Major John C "Values: The Key to Unlocking Combat Power." Military Review 67: 24-33 (Dec 87).

Labich, Kenneth. "Seven Keys to Business Leadership." Fortune, 118: 58-62+ (Oct 1988).

Luthans, Fred. Organizational Behavior (Third Edition). NY: McGraw-Hill Book Company, 1981.

Luthans, Fred and Diane Lee Lockwood. "An Observation System for Measuring Leader Behavior." In James G. Hunt, Dian-Marie Hosking, Chester A. Schriesheim, and Rosemary Stewart (Editors), Leaders and Managers: International Perspectives on Managerial Behavior and Leadership. 117-141. NY: Pergamon Press, 1984.

Luthans, Fred, et al. Real Managers. Cambridge MA: Ballinger Publishing Co., 1988

Mann, Floyd C. "Toward an Understanding of the Leadership Role in Formal Organization." In R. Dublin, et al., (Editors), Leadership and Productivity: 68-103. San Francisco: Chandler Publishing Co., 1965.

McConkey, Dale D. No-Nonsense Delegation. NY: American Management Association, 1974.

Meridith, Thomas R., Chief, Supply Officer Assignments. Telephone interview. Randolph AFB TX, 8 August 1989.

Miller, Annetta. "Stress on the Job." Newsweek, 111: 40-45 (Apr 1988).

Mintzberg, Henry The Nature of Managerial Work. NY: Harper and Row, 1973.

Morse, John J. and Francis R. Wagner. "Measuring the Process of Managerial Effectiveness." Academy of Management Journal, 21: 23-35 (Mar 1978).

Muchinsky, Paul M. Psychology Applied to Work. Homewood IL: The Dorsey Press, 1983

Pare, Terrence and Wilton Woods. "The World's 50 Biggest Industrial CEO's." Fortune, 116: 23-31+ (Aug 1987).

Penley, Larry E. and Brian L. Hawkins. "Communicating for Improved Motivation and Performance." In William K. Fallon, (Editor), Effective Communication on the Job 120-125. NY: AMACOM, 1981.

-----"Studying Interpersonal Communication in Organizations A Leadership Application." Academy of Management Journal, 28: 309-326 (June 1985).

Peterson, Lieutenant Colonel Tim O. Director of Supply, Air Force Logistics Management Center, Gunter AFB, AL. "Introduction to Critical Skills for Successful Chiefs of Supply." Address to 47th USAF Supply Executive Board. Maxwell AFB AL, 17 April 1988a.

-----Director of Supply, Air Force Logistics Management Center, Gunter AFB, AL. "Professional Development for Chiefs of Supply." Address to 48th USAF Supply Executive Board. Lowry AFB CO, 25 October 1988b.

-----Director of Supply, Air Force Logistics Management Center, Gunter AFB, AL. "The Skills of a Successful Chief of Supply." Address to Air Training Command, Chiefs of Supply. Randolph AFB TX, November 1988c.

-----The Acquisition of Managerial Performance Feedback Skills Through the Use of a Knowledge-Based Expert System. An Empirical Evaluation. Ph.D. dissertation. Texas A & M University, College-Station TX, 1988d.

Redding , W. Charles and George A. Sanborn. Business and Industrial Communication: A Source Book. NY: Harper and Row Publishers, 1964.

Sorcher Melvin. Predicting Executive Success. NY: John Wiley and Sons, 1985.

Steil, Lyman K, et al. Effective Listening. Reading MA: Addison-Wesley Publishing Co., 1983.

Ulschak, Francis L. Human Resource Development: The Theory and Practice of Need Assessment. Reston VA: Prentice Hall Co., 1983.

Van Fleet, David D. and Gary A Yukl. Military Leadership: An Organizational Behavioral Perspective. Greenwich CT: JAI Press Inc., 1986.

Wexley, Kenneth N. and Gary P. Latham. Developing and Training Human Resources in Organizations. Glenview IL: Scott, Foresman and Co., 1981.

Whetten, David A. and Kim S. Cameron. Developing Management Skills. Glenview IL: Scott, Foresman and Co., 1984

Yukl, Gary A. Leadership in Organizations. Englewood Cliffs NJ: Prentice-Hall Inc., 1981.

-----Leadership in Organizations (Second Edition). Englewood Cliffs NJ: Prentice-Hall Inc., 1988.

Zemke, Ron and Thomas Kramlinger. Figuring Things Out. NY: Addison-Wesley Publishing Co., Inc., 1988.

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The Air Force Supply Executive Board was concerned with the extremely high non-selection rate of officers for Chief of Supply positions, by the major air commands. A previous study identified skills that were lacking within the broad category of human skills. This study undertook the task of identifying specific human skills that could be tested. The study had three objectives: (1) Determining what human skills are critical for becoming a Chief of Supply. (2) Determining whether supply officers are deficient in these critical human skills. (3) Determining the preferred method of training for correcting those deficiencies. The methodology was based initially on a literature review designed to identify individual human skills. From those skills, a survey questionnaire was developed and distributed to 857 supply officers and Chiefs of Supply.

The findings identified a core of twelve human skills critical to becoming a successful Chief of Supply. Supply officers were identified as being deficient in five of the twelve skills. Due to lack of significant differences between capabilities of the two sub-populations, and the possibility of overstated capabilities, the list of skills to be trained included the top ten skills identified from each sub-population as important for a Chief of Supply. Also included are the top ten skills identified as requiring training for each sub-population. The result was a list of 22 core human skills identified for potential training. The method most identified for training these skills was a professional development seminar. The study recommends utilizing both base level seminars and regional seminars, and suggests that Chiefs of Supply would be the most appropriate instructors for the professional development of supply officers.